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ABSTRACT

Refinements of space standards and a survey of physical facilities are reported for Ontario-area universities. Part I, "1987 Refinements to the Council of Ontario Universities (COU) Space Standards," updates the interim report issued in August 1986 and consists of the following: development of the COU space standards, the work of the 1985-87 task force (terms of reference and methodology and unresolved issues), and the space categories (classrooms, class labs, research, office, library, athletic facilities, university and student services, and maintenance). Figures and appendices provide: 1978 and 1987 space guidelines, program classification scheme, task force membership, space classification scheme (notes, definitions and glossary), definitions of input measures, and 1987 revised space guidelines. In Part II, "Inventory of Physical Facilities of Ontario Universities, 1986-87," results of the inventory are tabulated in 33 tables. Space requirements are tabulated in five appended tables. (KM)

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Building Blocks

Volume 7

FINAL REPORT OF THE TASK FORCE TO REVIEW COU SPACE STANDARDS

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BUILDING BLOCKS

VOLUME 7

THE FINAL REPORT OF THE TASK FORCE TO REVIEW COU SPACE STANDARDS

Council of Ontario Universities
Conseil des Universites de l'Ontario
130 St. George Street, Suite 8039
Toronto, Ontario M5S 2T4

January 1988

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PREFACE

The Task Force to Review the COU Space Standards began its work in January 1985. In August 1986, it issued an interim report in the form of a second edition of Building Blocks, Volume 6. The space guidelines in the interim report were approved by Council on October 10, 1986. The 1986-87 survey of physical facilities collected data, including some new input measures, which were used to test the recommendations of the interim report. The present report contains in Part I the **1987 Refinements to the COU Space Standards**, with the deliberations and recommendations of the Task Force, and in Part II, the **1986-87 Survey of Physical Facilities**.

PART I

1987 REFINEMENTS TO THE COU SPACE STANDARDS

1.0 INTRODUCTION

1.1 Development of the COU Space Standards.

In 1971 the Council of Ontario Universities established a number of task forces to examine questions relating to capital funding and the utilization of physical facilities within the Ontario universities. The Task Force - Space and Utilization was charged with developing and testing a space and utilization guide. Two other task forces studied the space needs of education and the health sciences.

In 1972, the three task forces published their reports in Volumes 1, 2 and 3 respectively, of the Building Blocks Series. A fourth task force studied the various aspects of building costs, and published its findings in Building Blocks Volumes 4 and 5, thus completing the two major elements of a capital formula, space and cost.

In Building Blocks, Volume 1, the Task Force - Space Utilization described the space categories to be examined and supplied a methodology to be used in deriving standards, as well as examining the requirements of all discipline groups covered by the interim capital formula. Because of the need to produce an early report, the testing and revision of the formulas required in the original terms of reference were not carried out. Accordingly, the Committee on Capital Financing, in November 1972, established a Standing Subcommittee to continue the work begun by the task forces

and in particular, to receive comments from all of the Ontario universities with respect to the recommendations contained in the Building Blocks Volumes 1, 2 and 3. The Subcommittee was to revise the space factors as necessary and keep the Building Blocks guidelines up to date.

The report of the Subcommittee presented in Building Blocks, Volume 6 (1978) was essentially a supplement to volume 1 of the Building Blocks Series. It did not attempt to duplicate the extensive research into other space formulae, nor repeat the discourse on space standards and the development of space utilization factors that is contained in Volume 1, Volume 6 had two parts: a general commentary on the work of the Subcommittee and the measures taken to examine and accommodate the suggestions and comments that had been received from the universities; and a more detailed examination of each space category in terms of the data collected, the input measures used and the rationale for the space factors that had been adopted.

2.0 WORK OF THE 1985-87 TASK FORCE

2.1 Terms of Reference and Methodology

The 1985-87 Task Force to Review COU Space Standards was established in December 1984 as a technical support group for the Operating Grants Subcommittee on Capital Funding and Space. Its terms of reference were to assist the Subcommittee by:

1. Conducting a detailed review of the Building Blocks space guidelines and input measures, and revising them where appropriate to reflect current teaching and research conditions;

2. converting the space guidelines to metric measure; and

3. reviewing all aspects of data collection and reporting procedures for the triennial survey of university facilities.

Since the 1985 review was intended to update, rather than to supersede, the space standards approved by COU in 1978, it is assumed by the Task Force that readers wishing a full explanation for the development of the standards and the components of each space factor will consult Building Blocks Volume 1 and 6.

Like the Subcommittee that preceded it, the 1985 Task Force accepted the "technological approach" described in detail in Building Blocks Volume 1. The three components, the space classification scheme, the input measures and the space utilization factors were reviewed. The revised space classification scheme is contained in Appendix B, and as Volume 6, it consists of three sections: a series of explanatory notes, the definitions of the various categories, and a glossary which was developed by the Subcommittee on Space Coding. All three sections have been updated by the 1985 Task Force.

Ten input measures were adopted in Building Blocks Volume 1. These were reduced to five in Volume 6: FTE undergraduates, FTE graduates, FTE faculty, lab contact hours and equivalent volumes.

The 1985 Task Force added three more: FTE non-faculty research appointments; FTE non-academic office staff, and total assignable space (Categories 1-15 plus 17-20). The revised input measure definitions are included as Appendix C.

The third component, the space factors, was reviewed using data gathered for the 1983-84 COU Inventory of Physical Facilities. All proposed changes were then verified when data from the 1986-87 survey had been processed.

As part of its preliminary work, the Task Force conducted a literature search to see if new methods for calculating space requirements had been developed in other jurisdictions. Very little work has been done in this area since the revisions to Building Blocks were published in 1978. The standards as revised by the 1985 Task Force remain the best available means for determining space requirements for the Ontario universities, reflecting the needs of different programme and enrolment mixes. Some notable exceptions remain outside the formula: the veterinary medicine programme at Guelph where special animal facilities are treated as unique requirements; and the clinical areas of the health sciences.

At an early stage the Task Force identified three space categories thought to be most in need of revision: class laboratories, research, and academic offices. Programme level data for the two laboratory categories were collected for a sample of institutions. Some additional information (i.e. on non-faculty research

appointments) was collected from the institutions represented on the Task Force.

The Task Force's second term of reference required conversion of the space factors to metric units. In some cases this involved a direct conversion of imperial units. Where rounding was needed, it was done in accordance with the Task Force's assessment of the need for increasing or reducing the amount of space that should be generated in that category. There was no attempt to convert the basic spatial units (seat area, lab bench area, etc) from which the space factors are derived, since the rationale employed was originally developed in imperial units.

The third term of reference had as its aim the improvement of data collection and reporting procedures for the triennial space survey. The Task Force attempted to clarify the definitions of input measures and the glossary employed in the space classification scheme.

A series of surveys have been used in developing the COU space standards. The first survey covering the 1971-72 academic year was undertaken by the original Task Force with the results published in Building Blocks Volume 1. The 1972-78 Subcommittee on Revisions to Building Blocks used the second (1973-74) and third surveys (1975-76) as a basis for their updating of Building Blocks in Volume 6. The 1977-78 survey, employing the newly revised standards, was published as Appendix E of Volume 6. The fifth and sixth surveys

(1980-81 and 1983-84) used the revised 1978 standards, and the 1983-84 data were the basis for many of the 1985 revisions. The 1986-87 survey was conducted following Council's approval of the Task Force's Interim Report on October 10, 1986. The 1986-87 data were used to verify, and in some instances to modify, the recommendations made in the interim report. Both the latest COU space guidelines and those recommended in 1978 are shown in Figure 1, at the end of this section.

2.2 Unresolved Issues

In its work, the Task Force considered a number of aspects of the standards that will require further work by a group with a different mandate as well as particular expertise.

There continues to be a problem in applying the standards to performance-oriented disciplines, where creative activity is the equivalent of faculty research in the sciences. Faculty in music and visual arts need space apart from the studios which are inventoried and generated as class labs. Multi-purpose facilities are often used for these programmes: the basic categories of classroom, class lab and faculty office are not clearly differentiated. The availability of comparable facilities on the campus (but not controlled by the department) will affect space requirements in the performing arts. Some allowance must also be made for the fact that institutional programmes in the arts may be performance-oriented at one institution but not at another. In the opinion of the Task Force, a detailed study of music, drama, dance,

fine art and related programmes is needed, in order to define space requirements in a manner similar to that done for the sciences. This study should be carried out by a group that includes heads of fine arts departments. Qualitative information should be sought, such as expert opinion on the adequacy of existing space, identification of departments that are considered well-housed, what additional space is needed and why, how the space at individual departments compares with other Ontario universities or jurisdictions. Until this review is completed, the Task Force has chosen to present the 1986-87 inventory data for the Ontario College of Art in an appendix, rather than as part of the system tables.

The Task Force also considered the impact of computing on a number of space categories. Specific observations with reference to class labs, research, library study areas, offices, etc. are made in Section 3. In all these areas the provision of computer terminals or desk top computer equipment has an impact on space needs, although we still lack the information needed to accurately adjust the standards. For example, terminal rooms for student use might appear in several subcategories: Unscheduled Class Lab, Academic Office, Library Study, or Central Computing. Student computer use may be totally unrelated to scheduled lab work, and a simple trade-off with library study space may not be appropriate. A new category may be needed for computer areas not controlled by departments, and available for general student use. If this space

were to be generated separately, a simple allowance per FTE student would not be accurate, since frequency of use clearly varies with programme. As a first step in exploring the space needs of student computing, the Task Force recommended that inventory data be collected as a separate subcategory in the 1986-87 space survey. In future, this space might appropriately be reported as a type of unscheduled class lab, or as study space. Once comparable information is available, a method for generating student computing space can be developed.

It was also recognized that the COU standards are not satisfactory when applied to some institutions without a full range of programmes and facilities, such as OISE, OCA and the federated and affiliated colleges. The standards were developed for institutions with a broad range of programmes at both the undergraduate and graduate level. Specialized institutions may have only a few programme areas, and their facilities may not fit easily into the space categories as defined. Inventory may be entirely lacking in some categories, such as athletic facilities, and thus generation of space for that category may be inappropriate. The Task Force considered a number of possible solutions to this problem, such as attaching a qualifying statement that the standards be interpreted with caution when applied to very small or highly specialized institutions. Another alternative would be to include all institutions in the Classroom, Teaching Lab, Research Lab, Office and Library categories, and in the other categories such as Athletics/Recreation to include only those institutions having such

facilities. However, determining which categories an institution should be entitled to was a decision best left to another body with a mandate to make recommendations on what are essentially policy and funding matters. Until these matters are resolved, Algoma, Nipissing, and Hearst, will not be included in the tables of space entitlement under the COU formula, but will be placed in a separate appendix.

The question of inclusion of arts and science enrolment at federated and affiliated institutions was also considered by the Task Force. In some instances, universities in effect purchase services and facilities from such institutions. A case can be made that in such situations both input measures and related space should be included. However, since the federated institutions are currently ineligible for capital support, the Task Force decided to adhere to established reporting procedures and to exclude these data in the 1986-87 space report. The data for the St. George campus of the University of Toronto in the main body of the space report are unconfirmed by the university. Data from the offical submission, with the component accommodated through agreement with the federated universities, are presented in an appendix. It should be noted that, while Toronto's federated university component is the largest in the system in absolute terms, at several other institutions, the relative impact of inclusion or exclusion may also be significant.

In maintaining consistent reporting procedures with regards to the University of Toronto submission, the Task Force was well aware of an underlying inconsistency of policy in MCU's treatment of operating and capital funding for the federated institutions. This matter would most appropriately be taken up with MCU and OCUA.

Figure 1

COU SPACE GUIDELINES

	OLD (1978)	NEW (1987)
Category 1. CLASSROOM FACILITIES		
	13 NASF or 1.21 NASM	1.2 NASM per FTE student
Category 2. LABORATORY - UNDERGRADUATE		
Group W	8.5 NASF or 0.790 NASM per weekly contact hour	0.8 NASM
Group X	6.5 NASF or 0.604 NASM per weekly contact hour	0.6 NASM
Group Y	5.0 NASF or 0.465 NASM per weekly contact hour	0.5 NASM
Group Z	3.0 NASF or 0.279 NASM per weekly contact hour	0.3 NASM
Category 3. LABORATORY - GRADUATE AND FACULTY		
Group A	500 NASF or 46.468 NASM per input measure (FTE faculty + .5 grads)	45 NASM per input measure (FTE faculty +.5 other researchers +.5 grads.)
Group B	350 NASF or 32.528 NASM	30 NASM
Group C	200 NASF or 18.587 NASM	20 NASM
Group D	75 NASF or 6.970 NASM	10 NASM
Group E	0	1 NASM
Category 4. ACADEMIC OFFICE		
	210 NASF or 19.516 NASM per FTE faculty	13.0 NASM per FTE faculty x 1.15
	40 NASF or 3.717 NASM per FTE graduate student	4.0 NASM per FTE graduate student
	Office Service Space	
	Factors for faculty include a provision for academic support staff and service	30% of total generated for faculty and graduate students
Category 10. ADMINISTRATIVE OFFICE		
	9.0 per FTE student	13.0 NASM per FTE non-academic staff requiring offices
	Office Service Space	

Factor per student includes a provision for service space	30% of total generated for non-academic staff

Category 5. LIBRARY

Stack:

For compact storage:	
No provision for compact storage.	0.004 NASM per equivalent vol. for 10% of total collection
For remainder of collection:	
0.08 NASF or 0.0074 NASM per equivalent vol. for first 300,000	0.007 NASM per equivalent vol. for first 300,000 vols.
0.07 NASF or 0.0065 NASM per equivalent vol. for next 300,000	0.006 NASM per equivalent vol. for next 300,000 vols.
0.06 NASF or 0.0056 NASM for all other equivalent vols.	0.005 NASM per equivalent vol. for all other equivalent vols.

Study:

5.0 NASF or 0.465 NASM per FFTE undergraduate	0.5 NASM
12.0 NASF or 1.115 NASM per FFTE prof. undergraduate	1.0 NASM
8.0 NASF or 0.743 NASM per FTE graduate student	0.7 NASM

Service:

0.25 x (Stack and Study)	0.25 x (Stack and Study)

Category 6. RECREATION/ATHLETIC SPACE

8.0 NASF or 0.74 NASM per FTE student, plus:	0.9 NASM per FTE student, plus:
20,000 NASF or 1858.75 NASM	2,000 NASM for institutions with less than 4,000 FFTE 1,000 NASM for institutions with 4,000 to 8,000 FFTE

Category 9: PLANT MAINTENANCE

Included with other Special Use categories. Suggested range: 1.3 - 3.5 NASF (0.12 - 0.33 NASM) per FTE Student	0.015 x (total NASM inventory)

Categories 7,8,11,12,13,14,15: STUDENT AND CENTRAL SERVICES

6.0 NASF or 0.56 per FTE student for all Special Use space	2.0 NASM per FTE student
17.5 NASF or 1.63 NASM per FTE	
Suggested ranges per FTE student:	
Food Service:	
5.6 - 7.7 NASF	0.5 - 0.7 NASM
Merchandising and Bookstore	
1.2 - 2.0 NASF	0.1 - 0.2 NASM
Audio/Visual	
0.5 - 1.0 NASF	0.05 - 0.1 NASM
Computer, Shops and Stores	
1.5 - 3.5 NASF	0.1 - 0.3 NASM
Health Service	
0.3 - 0.5 NASF	0.03 - 0.05 NASM
Common Use and Student Activity	
5.8 - 7.0 NASF	0.5 - 0.7 NASM
Assembly and Exhibition	
1.6 - 3.9 NASF	0.15 - 0.40 NASM

3.0 THE SPACE CATEGORIES

3.1. Classrooms

Summary of 1987 Revisions

The present input measure, FTE students, is retained, and the space factor is 1.2 NASM per FTE, a conversion from the imperial factor of 13 NASF per FTE.

The classroom standard developed in Building Blocks, Volume 1 used the scheduled contact hour as an input measure, and a factor of 1.0 square feet to 0.8 square feet per contact hour, with greater efficiency assumed for higher numbers of contact hours.

The 1972-78 Subcommittee examined the relationship between scheduled contact hour and FTE student enrolment, and finding a close correlation, recommended a space factor of 13.0 NASF per FTE student, equivalent to 0.81 square feet per weekly student contact hour (non-lab), and implying room utilization in the order of 25-30 hours per week with seat occupancy between 74% and 62%.

The 1985-87 Task Force converted the classroom space factor to its metric equivalent, 1.2 NASM per FTE. While the total amount of classroom space generated using this space factor is considered adequate, mismatches between class section size and the size of available classrooms are problems on many campuses. With increasing enrolments in recent years, class section size has increased, creating more demand for larger classrooms. In some cases it may be possible to increase the availability of rooms by better scheduling. The alteration of existing classroom space is

another management strategy. The classroom factor has three components: seat area, frequency of use per week and percentage of seats occupied. Where hours of use cannot be increased through adjustments in the timetable, there is potential for improvement in the third component, if alteration funding were available to change room sizes.

3.2 Class Labs

Summary of the 1987 Revisions

The input measure is the contact hour, with the following metric space factors for each programme group:

W: Engineering (excluding electrical engineering), metallurgy, and agriculture (excluding agricultural economics).

0.8 NASM per weekly contact hour

X: All other physical and biological sciences, including basic medical sciences and forestry. Fine and performing arts.

0.6 NASM per weekly contact hour

Y: Anthropology, education, geography, psychology, physical education and recreation, physical and occupational therapy, consumer and environmental studies and related.

0.5 NASM per weekly contact hour

Z: All other programmes.

0.3 NASM per weekly contact hour

In the first volume of Building Blocks, a single space factor was recommended for all class labs (excluding Agriculture and Health Sciences). The input measure was the laboratory contact hour. The Subcommittee which revised the standards in 1978 reviewed

laboratory inventory data by department for a sample of institutions, and chose four programme groups with different factors based on bench area requirements for the different disciplines.

The 1985 Task Force tested FFTE course enrolments as an alternative input measure, and like the earlier Subcommittee, found that course enrolment data was neither more accurate nor easier to collect. The lab contact hour was retained as an input measure, with clarified definitions to improve reporting. For example, unscheduled use of labs should be excluded from the contact hour count. The timetable should be the primary source of contact hour counts, with the calendar as a secondary source. Space shared between teaching and research labs should be prorated in the inventory.

In order to review both the space factors for the programme groups and the composition of the groups, programme level data were collected for a sample of institutions. Derived space factors for each discipline were compared with the COU space factors, and some changes were made in the programme groups, to more accurately reflect space needs of certain disciplines. For example, electrical engineering was separated from the other engineering programmes in Group W, since its actual laboratory requirements are more like those of physics in Group X. The Task Force concluded that requirements for the sciences do not differ significantly when working lab space, preparation areas and storage rooms are taken

into account. Therefore, all physical and biological sciences were placed in Group X, with the same space factor. Physical education and recreation were moved from Group Z to Group Y with education. The revised groups for both instructional lab and research are shown in Figure 2. The new metric space factors are rounded equivalents of the imperial factors.

As with classrooms, utilization of lab space each week affects efficiency. Scheduling more labs in the same room is not always practical, especially for upper-level courses with highly-specialized requirements. There is a trade-off between capital and operating resources: more intensive use requires more staff time. Although the Task Force retains the existing standard of 18 hours usage per week, it recognizes that there is pressure to increase usage as a trade-off with the capital cost of more research space. If, for example, the curriculum can be revised to permit more intensive use of existing class labs, some class lab space might be converted for research use.

As was the case in other space categories, the increasing use of computers impacts on class labs. Unscheduled use of computer facilities is now common for students in a number of disciplines, not simply computer science or engineering. The Task Force discussed this matter, but concluded that there is not enough information to make major adjustments in the standards at this time.

Figure 2

Programme Classification Scheme

COU space standards make use of programme or discipline groups in the generation of class labs, research and library space. The programme groups were developed originally from those listed in Appendix D of Volume I of Building Blocks. The programmes have been classified at the "second level" of detail as listed in that publication and it may be taken that these second levels are inclusive of the detailed programme names listed at the "third level".

The list of professional programmes used in the generation of library facilities are those of the operating grants formula.

Programme Related Space Factors

Programme/Discipline	Class Lab Factor	Group	Research Factor	Group	Professional Programme
Education					
Physical and Health Education Recreation	0.5	Y	10	D	
Kinetics, Kinesiology,	0.5	Y	20	C	
Other Education	0.5	Y	1	E	Yes (except 4 yr. concurrent)
Fine and Applied Arts					
Theory, Ceramics, Drama, Theatre, Engraving, Industrial Design, Interior Design, Lithography, Music, Painting, Art, Printing, Sculpture	0.6	X	1	E	
Humanities & Related					
Classics, Classical and Dead Languages, Creative Writing, History, Mass Media Studies, Modern and Medieval Languages and Literature, Philosophy, Religious Studies, Trans-	0.3	Z	1	E	

lation and Interpretation					
Library and Records Science	0.3	Z	10	D	Yes
<u>Social Sciences & Related</u>					
Anthropology, Archaeology, Geography, Man/Environment Studies	0.5	Y	10	D	
Area Studies, Commerce, Business Administration, Economics, Agricultural Economics, Political Science, Sociology, Military Studies, Linguistics	0.3	Z	1	E	
Law, Social Work	0.3	Z	1	E	Yes
Psychology	0.5	Y	20	C	
<u>Agriculture & Biological Science</u>					
Agriculture (excluding Agricultural Economics)	0.8	W	45	A	
Biochemistry, Biology, Biophysics, Human Biology, Microbiology, Physiology, Botany, Zoology	0.6	X	45	A	
Household Science & Related (excluding Human Biology)	0.5	Y	10	D	
Veterinary Medicine and Sciences	0.8	W	45	A	Yes
<u>Engineering & Applied Sciences</u>					
Architecture, Landscape Architecture	0.6	X	1	E	
Engineering (excluding Electrical Engineering)	0.8	W	30	B	
Electrical Engineering, Engineering Science	0.6	X	30	B	

Forestry	0.6	X	30	B	
Health Professions and Occupations					
Medicine	0.6	X	45	A	Yes
Dentistry, Optometry	0.6	X	30	B	Yes
Dental Hygiene, Medical Technology, Pharmacy, Public Health	0.6	X	30	B	
Nursing	0.3	Z	1	E	
Rehabilitation Medicine Art as Applied to Medicine	0.6	X	20	C	
Clinical Science Departments*	0		0		
Mathematics and Physical Sciences					
Actuarial Science, Applied Mathematics (except Computer Science), Mathematical Statistics, Mathematics	0.3	Z	1	E	
Computer Science	0.3	Z	10	D	
Astronomy, Chemistry, Geology and related, Meteorology, Oceanology Physics	0.6	X	45	A	
Metallurgy and Materials Science	0.8	W	30	B	

*Do not report corresponding inventory. See Category 20.

3.3 Research

Summary of 1987 Revisions

The research input measure is now FTE faculty plus 1/2 FTE graduate students and 1/2 non-faculty researchers. Revised programme groupings and metric space factors are

A: physical and biological sciences, basic medical sciences and agriculture (except agricultural economics)

45 NASM per input measure.

B: engineering and related, metallurgy, pharmacy, dentistry

30 NASM per input measure.

C: psychology, consumer and family studies, kinetics, kinesiology

20 NASM per input measure.

D: anthropology, geography, environmental and area studies, computer science, library science

10 NASM per input measure.

E: all other programmes

1 NASM per input measure.

The Subcommittee which produced the revised space standards in 1978 analyzed existing research inventory for a sample of institutions, and arrived at five groups, with space factors from 500 NASF per researcher to 0. FTE faculty and 1/2 FTE graduate students were the research input measures, and it was suggested that in future post-doctoral fellows might be included.

The above suggestion to include post-doctoral fellows was not implemented for the 1980 and 1983 surveys. The 1985 Task Force attempted to define and collect data on the additional research staff who should generate space independently of faculty and

graduate students. The weighting to be given to these additional research appointments was also considered. Some are equivalent to faculty. On the other hand, there has been a tendency to hire post doctoral fellows or research assistants to replace graduate students in departments where doctoral enrolments have declined. Therefore a 50% weighting was considered appropriate. Since institutional data on these categories of staff are often incomplete, it was decided that a head count, rather than FTE, should be used. The following definition was established:

> . . . post-doctoral fellows at any salary, and other equivalent-to-faculty research appointments, only if the annualized salary paid via the university, irrespective of funding sources, is equal to or higher than the floor of the assistant professor range at that institution. . . . the count should be limited to appointments of at least three months' duration.

The Task Force examined programme level research data for a sample of institutions, and made some changes in the programme groups. For example, computer science was moved up from Group E to Group D, in recognition of the increasingly space-intensive research in that discipline. Kinetics and kinesiology were previously reported in either Group A with the basic medical sciences or in Group D with physical education. On the basis of their derived space factors, these programmes were moved to Group C. Metallurgy was moved from Group A to Group B with engineering, consistent with its treatment in the instructional lab category. Consumer and family studies were moved from Group D to Group C; human biology is in A with the other life sciences. Agricultural economics is separated from the

other components of agriculture (Group A), and is grouped in E with other economics programmes.

The space factors were rounded into metric units consistent with the derived space factors of the sample. The problem of providing sufficient research or equivalent to research space for Category E faculty was also addressed, and a factor of 1.0 NASM was recommended. Humanities and social science faculty are increasingly engaged in simulation and other research activities requiring the use of computers, and thus need more space than is available in the average faculty office. Faculty in music and the fine arts often need specialized space for their creative activities, which are the equivalent to research. The provision of a modest Group E space factor only partially meets the research needs of some of the Group E disciplines. As was noted in Section 2.0, a more detailed study of the fine and performing arts is needed, in order to determine more precisely the space requirements of various components of these programmes.

Some universities have large research facilities that are used by other universities or by non-university researchers. In the reporting of inventory, this space should be pro-rated, with the portion used for non-institutional purposes classified in Category 19.

3.4 Office

Summary of 1987 Revisions

FTE faculty and graduate students are retained as input measures for the Academic Office category. In recognition of the disparity between the FTE faculty count and the head count, the faculty input measure is increased by 15%. FTE non-academic staff requiring offices is a new input measure for the generation of departmental and central administrative office space. Office service is 30% of other generated space in Category 4 and Category 10. The space factors are

13.0 NASM per FTE Faculty, times 1.15, plus

4.0 NASM per FTE graduate student

13.0 NASM per FTE non-academic staff requiring office space

Office Service

30% of total generated above

The Building Blocks standards were developed with two office categories, Academic Office (4.0) and Administrative Office (10.0). Space entitlement for each was calculated in a different way. Building Blocks, Volume 1 recommended 243 NASF per FTE faculty, which was intended to cover "all instructional and related" office space such as faculty offices, graduate student offices, office space for academic support staff and departmental office space, conference rooms, file rooms, etc. Building Blocks, Volume 6 included graduate students as a separate input measure for academic office space, and also commented on the difficulty of generating enough office units, particularly since many older buildings in the Ontario system had been built with larger offices. An allocation of 210 NASF per FTE faculty to cover all office needs in academic

departments, and an additional allowance of 40 square feet per FTE graduate student were recommended. For Category 10, Administrative Office, the Subcommittee confirmed the recommendations made earlier in Building Blocks, Volume 1, and rounded the space factor to 9.0 square feet per FTE student.

The Task Force was concerned that the existing input measures (FTE faculty and graduate students in Category 4, and FTE students in Category 10) did not adequately reflect the office space needs of non-academic staff, since the institutional ratios of non-academic staff to faculty (and students) are quite variable.

FTE faculty and student data are readily collectible and verifiable, but there is no equivalent data base for non-academic staff. However, the Task Force considered it essential that the number of staff requiring office space be included as an input measure, and recommends that COU take steps to improve the collection of non-academic staff data. The new office space factors are based on a minimum office size that applies equally to academic or administrative staff.

The new non-academic office staff input measure will be the FTE of filled positions as of 1 October for secretarial, clerical, management and professional staff paid from all funding sources. Staff of ancillary units will be excluded, as will all office staff in units where office space is inventoried elsewhere: Library, Food Service, Bookstore/Merchandising, Health Service, and Residence.

To simplify reporting for the 1986-87 survey, departmental and central administrative staff were not separated. However, separate reporting for the two categories is recommended for future surveys. When the space standards are used for planning, staff data will normally be used to estimate separately the space requirements for departmental administrative staff offices (4.4) and central administrative staff offices (10.1).

After reviewing the data collected in the 1986-87 survey, the Task Force adjusted the office space standards contained in its interim report. The assumed office size of 125 NASF, which was a component of the original academic office standard, is not realistic for older buildings where the average size of a single office is 140 or 150 NASF. For these institutions, the total amount of space inventoried may appear adequate, but there will be too few office units. An analysis of inventory in the faculty office subcategory (4.1) showed an average office size of 14.1 NASM per FTE faculty. The Task Force agreed that a planning standard for new office space would be lower, but felt that the reality of existing office configurations must be recognized, particularly when inefficiencies cannot be corrected because of a shortage of alteration funds. Therefore, an office space factor of 13 NASM per FTE faculty and non-academic staff was recommended, instead of 12 NASM in the interim report. This figure is consistent with both the Ontario government office space allowance for professional staff (13.5) and the size of existing offices in older university buildings.

The FTE faculty input measure was also found to be inadequate to estimate the office unit requirements of universities with changing scholarly and research activities. The prevalence of cross-appointments, visiting scholars and part-time appointments increases the need for office units, and the salary conversion used to derive the faculty FTE does not accurately represent the number of bodies needing accommodation at a given time. On some campuses professors emeriti may be given office space, and the probable ending of mandatory retirement may result in more reduced responsibility appointments for faculty who will still need office space. In addition, faculty on sabbaticals frequently remain on campus and need office space. In recognition of this discrepancy, the Task Force recommends supplementing the FTE faculty count by 15%. In other words, the faculty input measure is now FTE faculty x 1.15.

The office allowance for FTE graduate students will be 4.0 NASM, a rounding of the imperial equivalent (40 NASF). As in other categories, there should be no double counting of input measures. An additional 30% will be generated for service space in the office categories.

The Task Force also discussed the use of desk top computing equipment as a factor in increasing office space requirements. It concluded that there is not yet enough empirical evidence to incorporate additional computing space in the office standards.

3.5 Library

Summary of the 1987 Revisions

The revised library standards are

Stack: **0.007 NASM per equivalent volume for 0-300,000 vols.**

0.006 NASM " for 300,000-600,000 vols.

0.005 NASM " for all other vols.

0.004 NASM " for 10% of total eq. vols. (A new provision for compact storage).

Study: **0.5 NASM per FTE undergraduate.**

1.0 NASM per FTE professional undergraduate student.

0.7 NASM per FTE graduate student.

Service: **25% of (Stack and Study)**

3.5.1 Stack Space

The original factors contained in Building Blocks, Volume 1 provided for a range of 10 to 14 volumes per square foot. The Subcommittee found that these standards were too generous given the rules for measuring space that had been adopted in the Ontario universities. Typical stack areas in a number of universities were examined, which suggested an average of 15 volumes per square foot. The Subcommittee therefore recommended reductions in the space factors per equivalent volume.

In the course of its work, the Task Force consulted with the Ontario Council of University Librarians. The revised volume equivalents were provided by OCUL.

The original stack space factors included both a built-in growth

component and an allowance for working shelf space. (The use of equivalent volumes as the stack input measure also incorporates a growth factor, since the increase in collection size from one space survey to the next results in the automatic generation of more space.) As revised, the stack factors include empty space for daily sorting on shelving, but not a component for collection enlargement.

The Task Force concluded that some efficiencies could be achieved with the use of compact storage, and added a fourth factor for 10% of the total collection. At the same time, it was recognized that the provision for compact storage may require architectural changes, particularly in older buildings. After reviewing the 1986-87 survey data, the Task Force confirmed that the revised stack space factors were appropriate. It appears that institutions are coping with significantly less space than the standard allows by either incurring higher operating costs or tolerating more inconvenience in handling and storing library materials.

3.5.2 Study Space

The original Building Blocks study space standard assumed a study carrel of 25 square feet with sufficient stations to accommodate 22% of undergraduates and 40% of graduate students. This resulted in space factors of 5.5 and 10 square feet respectively. The 1978 Subcommittee found that study carrel required only 20 square feet. On the recommendation of the librarians, study carrels were allowed for 25% of undergraduate students, resulting in a space factor of 5

square feet. A separate space factor of 12.0 sq. ft. per FTE was recommended for students in professional programmes.

In rounding the study space factors to metric units, the Task Force took into consideration the fact that graduate students also generate space in the office and research categories. It was also suggested that the increasing use of computer terminals and the provision of decentralized study space may moderate the need for library study space at some institutions.

A trade-off between stack and study space is a necessary part of library space management. Institutions can, for example, create new study space in home departments and thus free up space for stacks in the main library building.

3.5.3 Service Space

Library service space, according to Volume 1 of Building Blocks, may be generated either through an allowance per FTE student or as a percentage of stack and/or study space. The 1978 Subcommittee favoured the latter approach recognizing that in periods of stable or even declining enrolment, collections will likely continue to increase. A factor of 25% of the area generated above for stack and study space was recommended for this subcategory.

The Task Force also noted that stack space may appear to exceed the standards if service space and non-assignable space such as phantom fire corridors are not reported as defined. This point had been made in Building Blocks, Volume 6.

3.6 Athletic Facilities

Summary of the 1987 Revisions

The revised standard changes the basic entitlement of 20,000 NASF to a small-size entitlement of 2,000 NASM for institutions with less than 4,000 enrolment and 1,000 NASM for those with 4,000 to 8,000. The remaining space is generated at 0.9 NASM per FTE.

The 1978 recommendation of 20,000 NASF + 8 NASF/ FTE student generated at total amount of space that was very similar to that produced by the first Building Blocks proposal. However, the 1978 Subcommittee concluded that a sliding scale approach was necessary in order to ensure that the smaller institutions would generate sufficient space to cover a building of 40,000 to 50,000 NASF, the minimum area needed to contain a pool, gymnasium, training rooms, locker rooms and showers.

Assessing the adequacy of athletics and recreation space is a complex matter. Institutions are quite diverse in the match between generated space and inventories. Requirements for athletic and recreation space vary according to an institution's commitment to inter-university athletics, the recreational interests of its students, the proportion of students in residence, the availability of other facilities in the community, and the mix of extracurricular activities with academic programmes in physical education and related disciplines.

The original standard for athletic space included a base entitlement of 20,000 NASF (1,859 NASM) for each institutions, plus an additional 8 NASF (0.743 NASM) per FTE student, for a total

standard that provides 10 NASF per FTE student at an institution with an enrolment of 10,000. This standard is consistent with that used in other jurisdictions. The Task Force could see no compelling case for departing very much from the old standard of 10 NASF per FTE student, which was converted to a metric space factor of 0.9 NASM per FTE. In addition, the basic entitlement of 20,000 NASF for each institution was changed to a small size entitlement of 2,000 NASM for institutions with less than 4,000 enrolment and 1,000 NASM for those with 4,000 to 8,000.

The Task Force observed that there may be errors in reporting of athletics inventory that is primarily for community or academic programme use. The definitions are clarified so that any specialized space used exclusively or almost exclusively for academic programmes is reported in the class lab category.

3.7 University and Student Support Services

Summary of 1987 Revisions

Category 9.0, Maintenance Shops, is separated from the other service categories. The generated space is 1.5% of a new input measure, total Net Assignable inventory. All other General and Special Use categories are combined; their total generated space is 2 NASM per FTE student. Ranges for each category are retained as benchmarks, and the inventory of each is to be reported separately.

3.7.1 General Use

Food services; merchandising, bookstore etc.; commons and student activity; and assembly and exhibition were dealt with as separate categories in Building Blocks Volume 1. In Volume 6, the four categories were grouped, allowing the universities to trade off the

need for additional facilities in one area with those in a related category. Further, a range of values was suggested for each of the categories, which reflected the use of space in most of the Ontario universities. A space factor of 17.5 NASF per FTE student was recommended for the group.

3.7.2 Special Use and Support

This group includes audio visual, health services, maintenance shops, computer facilities, central stores and shops. As with the previous group, the Subcommittee established an overall space factor of 6.0 NASF per FTE student for the group and indicated only a range of values for each individual space type. Central utility space was excluded from the plant maintenance category and placed in Category 16.0, Non-assignable.

The Task Force concurred with its predecessor's observations regarding differing institutional priorities in the various service areas. Requirements for some space categories are influenced by campus location and the proportion of residential students. For example, campuses outside urban areas will need more food service, merchandising and student activity space. However, one use may not necessarily offset the other. Because of these institutional differences, it was decided to combine the general and special use categories (excluding maintenance), and generate the aggregate space at 2.0 NASM per FTE student, which is approximately the same as the previous combined total excluding Category 9.0. The individual categories will be retained for the reporting of

inventory, with the 1978 space factor ranges (converted to metric and rounded) provided as benchmarks.

A new subcategory, 12.3, was added so that inventory data on space for general student computer use could be collected and evaluated. In view of concern about the development of microcomputing within academic programmes generally, the possibility of reporting this space in the library or class lab categories will be considered.

	NASM/FTE
Food Service	0.5 - 0.7
Merchandising and Bookstore	0.1 - 0.2
Audio/Visual	0.05 - 0.10
Computer, Shops and Stores	0.15 - 0.35
Health Service	0.03 - 0.05
Common Use and Student Activity	0.5 - 0.7
Assembly and Exhibition	0.1 - 0.4

3.8 Maintenance

Plant Maintenance (Category 9.0) was previously included with other university services in the Special Use group, for which space was generated on the basis of FTE enrolment. The 1985 Task Force concluded that a percentage of the total space to be maintained would be more representative of actual requirements for maintenance shops space. The inventory for this category was calculated as a

percentage of total NASM (in Categories 1-15 and 17-20). In the revised COU space standards, 1.5% of total NASM inventory will be the new standard for the generation of maintenance space.

Appendix A

Appendix A

MEMBERSHIP OF THE TASK FORCE TO REVIEW COU SPACE STANDARDS AND INVENTORY REPORTING PROCEDURES

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Appendix B

Appendix B

SPACE CLASSIFICATION SCHEME

Section 1 - Notes

The space classification scheme is presented in three sections. This section defines the nature and scope of the inventory that is to be included in the reporting and addresses several recurring questions concerning space inventory and classification.

Categories

Section 2 is the classification scheme itself. It includes 20 categories of space type which are accompanied by definitions aimed at the main intent of the classification. The first 15 of these categories identify the more usual kinds of usable or assignable spaces in an institution for which space standards could normally be developed, while categories 16 through 20 classify non-formula spaces or highly specialized facilities generally of a unique nature. The definitions of the space types are meant to be mutually exclusive.

Subcategories

Each of these 20 initial categories is further classified into one or more subcategories. These subcategories are identified merely by their names and by examples of specific room types that would likely be included. The examples of room types are neither exhaustive nor mutually exclusive, but are instead intended to characterize the nature of the subcategory. It should be emphasized that all rooms classified into a subcategory must meet the definition of the main category itself.

Exclusions

A specific set of Room Types Excluded has been specified for most categories of space to assist in the immediate identification of classification problems. For detailed commentary on individual rooms it is recommended that the glossary be consulted.

Glossary

Section 3 of the classification scheme is the glossary. This is intended to be a flexible document which will record detailed decisions and trade-offs that have been made in space classification problems. In some cases use of the glossary is probably the only means by which a room could be classified (e.g. see "Computing Facilities"). The glossary therefore, forms an integral part of the classification scheme.

Scope of Inventory

The inventory of space that is to be reported is to include all spaces defined in the classification scheme regardless of whether the space is owned, leased or rented by the university or others, and regardless of the source of funds used for its construction or acquisition and regardless of the age or condition of the space. By this definition, the space reported may include facilities not owned by the university on one hand, or may exclude owned facilities on the other. Owned facilities which are excluded for example, could be houses used for domestic purposes or income and other properties which only incidentally serve the university population. In the broadest terms, the space to be reported should be that necessary and useful to the university in supporting the institution and its faculty, staff and students in their mission of instruction, research and public service.

Coding

The classification scheme in the strictest sense is not a coding scheme in that no information about the relationships between the categories is implied or can be obtained from the category numbers. It would appear that broad agreement on just what these relationships might be cannot be reached. In the absence of further direction, several universities have used the present list of numbers as a self-contained coding structure or have used the list as the basis for the development of a detailed use-coding scheme. As unsystematic as this may be, it at least assures a direct map into any future code structure which may be used for inter-university reporting, although of course, any set of one-to-one identifiers would do. In any event, it is expected that government reporting or inter-university comparison of space types will be conducted at the category or subcategory levels of detail. (This of course does not preclude the possibility of reporting by department and space type say, or by source of funds and space type.) It is further recognized that this classification scheme will not normally be detailed enough for internal use and the universities may differ widely on the development of a third level of space classification. It is expected that any handling of data at this third level will be on an ad-hoc basis and that no large systematic reporting or handling of data need be included for. Alternatively, the universities are encouraged to develop automatic means for reporting at the subcategory level, with and without subtotaling by department, building, and possibly source of funds.

Pro-Rationing

One of the primary purposes of the classification scheme was to distinguish between spaces that were put to differing uses by means of adequate definitions or, where these judgements were difficult to make, to develop entire new categories to describe those which fell somewhere in between. Pro-rationing should not, in general, be required to distinguish between differing uses or even to describe multiple use facilities. Whole classifications should almost always be attempted on the basis of the closest definition. Of course, minimizing the pro-

rationing of rooms on the basis of use will not necessarily extend to the control, function or funding of space.

Source of Funds

As previously mentioned, all facilities that can be classified by the definitions are to be included regardless of source of funds. While source of funds is an important component in the description of the capital assets of an institution and, in particular, special provisions need to be made to encourage private funding of universities, it was felt that these matters lie outside the development of a space classification scheme. It was expected that each university would retain suitable records of its funding sources without direction.

Measurement of Space

Exacting definitions of space classifications were reviewed on pages 23 through 27 of Volume 1 of Building Blocks and comprise an excellent discussion of the major space types. Further specification of the methodology of space measurement hardly seems appropriate in such a practiced jurisdiction as Ontario. There are two areas however, in which recurring difficulty in the classification of space are apparent. The first concerns the classification of Inactive space.

Broadly speaking, the intent of the classification scheme is to classify inactive spaces as either assignable or unassignable. Inactive Assignable (Category 19.5) spaces are those which are deemed to be available for immediate occupancy but which had not been assigned to individuals or groups at the time of the survey. These spaces then, are unassigned (to individuals or groups) but are assignable (available for immediate use). Also included in this group would be larger areas constructed, finished and held for future use, or areas removed from active use because of declining needs or lack of operating funds, for example, an entire floor of a building which has been locked and kept under minimum heating. Such spaces, even though they may require some start-up time, should be reported in this subcategory. Further reporting in this subcategory could be spaces of small or moderate size which were unavailable for use for periods of time of up to one-half of an academic term, due to regular maintenance, refurbishing or minor renovations and for which the inclusion of the space either here (or for that matter in Categories 1 to 15), would not normally present a distortion of the needs of the institution.

The classification Inactive Unassignable (Category 16.3) should be then reserved for those spaces which would require long lead times and extensive work to make them available for occupancy. Such spaces would include those left unfinished at the time of construction or those undergoing renovations or major repairs requiring large areas of a building to be out of service for many months. In the case of very extensive renovations, it may in fact be more convenient to consider the building as "under construction" and simply not report the space at all.

The second difficult area of classification concerns the measurement of Circulation Area. According to the adopted definition on page 26 of Building Blocks, circulation area is that which is required for physical access to some subdivision of space - whether or not enclosed by partitions. With increased use of office landscaped designs and the particular problems of measuring library space, there appears to be a need for some commentary in order that uniformity of measurement is achieved.

For such large unobstructed areas we should note that:

a) Code requirements must be met. The Ontario Fire Marshall's Office requires that floor plans of office landscaped areas indicate fire corridors, which must be left unobstructed. In addition, in some work areas subject to congestion, for example, large machine shops or warehousing areas, corridor demarcations may be painted on the floor to indicate fire escape routes or areas that must be left unobstructed for safety reasons. These should be measured as Circulation Area.

b) The divisions of space for which general access is required, as referred to in the Building Blocks definition, should certainly be construed to be those at the Category level of detail, and in most cases, the divisions should be made at the Subcategory level. In other words, routes necessary for general access to blocks of space which would be inventoried within a single subcategory, or corridor spaces which separate areas falling into separate subcategories, should be measured as Circulation Area.

c) Single rooms or work areas, plus integral support areas which serve a single purpose, for example: a gymnasium; a block of book stacks; spectator seating areas; or accounts payable offices plus file areas; should not include any spaces within them as Circulation Area. It is general access to the area which is the determinant, not routine movements within those spaces. Once again, an interpretive judgement will often need to be made on this space type.

Age and Quality

The age or condition of space is not to be held as a consideration when reporting space in the classification scheme. While it is agreed that such considerations may have considerable impact on the efficiency or usability of facilities, it was felt that these effects lie outside the purposes of the space classification scheme. First, the definitions are intended to classify space as used or as available for use. Second, no satisfactory methodology has yet been devised by which to judge the quality of space. Third, it is almost certain that such a judgement would be at least partly predicated on the actual inventory of the facility. It is recognized that some square metres are not equivalent to others, but the means for making these assessments must be separate

from those used to inventory and classify the spaces.

Clinical Facilities

The inventory of universities with programmes in the health sciences may include spaces which are used as hospitals or may house clinical staff usually located in hospitals. Much but not all of the funding for these facilities was provided under the Health Resources Development Plan and is historically referred to as Z-formula space. In the 1978 edition of Building Blocks, Volume 6, no specific method of reporting hospital or clinical facilities was identified.

The 1986 edition defines Category 20 as space that is used in direct support of instruction, research and service for clinical health science disciplines. This will include all areas used for patient care, such as patient bedrooms and bathrooms, nurses' stations, surgery, treatment rooms, waiting rooms, and service and supply areas.

In addition to the above categories of space, Category 20 should also be used for health science space in support of clinical instruction or research where the corresponding input measures are not included in Categories 1-15.

Input measures and inventory supporting the basic medical sciences (Anatomy, Biochemistry, Biophysics, Genetics, Microbiology, Pathology, Pharmacology, and Physiology) will continue to be reported in Categories 1-15, along with other health programmes (Dentistry, Nursing, Pharmacy, Optometry, Rehabilitation Therapy) identified in the Undergraduate and Research Laboratory groups.

For convenience, the definition of FFTE Undergraduates has been drawn up in such a way that it will include interns and residents. It is felt that the distortion of generated space is not serious.

Both input measures and space inventory should relate only to clinical space owned and operated by the university.

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SPACE CLASSIFICATION SCHEME

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SPACE CLASSIFICATION SCHEME

Section 2 - Definitions

1. CLASSROOM FACILITIES

Definition

A room generally used for scheduled teaching purposes, not requiring special equipment of a kind that makes the room unsuitable for classroom instruction, and rooms directly serving such facilities.

Subcategories

1.1 Tiered classrooms

Tiered or sloped-floored lecture theatres, lecture rooms, lecture demonstration rooms, and classrooms.

1.2 Non-tiered classrooms

Flat-floored lecture rooms, classrooms, seminar rooms, and tutorial rooms.

1.3 Classroom service space

Examination rooms, projection rooms, preparation rooms, closets, storage rooms and other related areas.

Room types excluded

Class laboratories - see category 2.

Assembly facilities - see category 15.

Conference rooms - see categories 4.5 and 10.2.

2. LABORATORY - UNDERGRADUATE

Definition

A room used for instruction requiring special-purpose equipment for undergraduate student participation, experimentation, observation, or practice in a field of study, and rooms directly serving these facilities.

Subcategories

2.1 Scheduled class laboratory space

Teaching laboratories, special subject rooms, instructional shops, typing laboratories, drafting rooms, art, dance and music studios, music practice rooms, language laboratories, computer terminal rooms and athletic facilities primarily used for instruction, and other specially designed rooms largely used for scheduled instruction, such as dental, rehabilitation, and psychology clinics.

2.2 Unscheduled class laboratory space

This subcategory may be optionally used to classify general workrooms, drafting rooms, and other special-purpose facilities generally used for informal or irregularly scheduled instruction, or for practice.

2.3 Laboratory (undergraduate) support

Preparation rooms, balance rooms, laboratory storage rooms, demonstration rooms, animal areas, greenhouses, dark rooms, etc. directly serving the laboratory facilities.

Room types excluded

Laboratory space for graduate students and faculty - see category 3.

Non-university clinic facilities for health science programmes in hospitals or other health care areas - see category 20.

Clinic facilities for university health services - see category 13.

Athletic facilities - as defined in category 6.

Service areas for these excluded room types.

Animal areas classified elsewhere - see categories 3 and 18.

Greenhouses classified elsewhere - see categories 3, 9 and 15.

Computer terminal rooms for student use, not in support of scheduled instruction - see category 12.3.

3. LABORATORY - GRADUATE AND FACULTY

Definition

A room used for laboratory applications, research or training in research methodology which requires special-purpose equipment for staff or graduate student experimentation or observation, and rooms directly serving these facilities.

Subcategories

3.1 Laboratory space

Faculty, graduate, and general research facilities.

3.2 Laboratory (faculty and graduate) support space

Rooms directly serving one or more research facilities which directly provide the necessary support to the research functions such as balance rooms, coat rooms, storage areas, dark rooms, technicians' office/workrooms, workshops, animal areas, and greenhouses.

Room types excluded

Undergraduate laboratories and their support space - see category 2.

Animal areas classified elsewhere - see categories 2 and 18.

Greenhouses not in support of research - see categories 2, 9 and 15.

4. ACADEMIC DEPARTMENTAL OFFICES AND RELATED SPACE

Definition

A room usually assigned to one or more individuals on a permanent basis, containing office-type equipment and used by faculty, departmental administrative and support staff, and students, or a room directly serving these facilities.

Subcategories

4.1 Faculty offices

Single or multiple-occupancy offices for teaching and research faculty with rank up to and including department chairmen.

4.2 Other academic appointments offices

Office space used by post-doctoral fellows, visiting professors, adjuncts and other research staff, not holding a regular faculty appointment. See the definition of Other Research Appointment (Appendix D, 4.0).

4.3 Graduate student offices

Single or multiple-occupancy rooms assigned to graduate students for study and to graduate and undergraduate students

in their capacity as tutors, teaching or research assistants.

4.4 Departmental support staff offices

Office space used by demonstrators, technicians, other professional staff, administrative, clerical and secretarial support staff to academic departments.

4.5 Office support space

Rooms directly serving office space in this category such as conference rooms, computer rooms not for student use, special reference libraries, file rooms, vaults, duplicating rooms, waiting and reception areas, interview rooms, storage areas, private toilets, lunch rooms, and private departmental lounges.

Room types excluded

Student offices associated with extra-curricular student organizations - see category 14.

Graduate laboratory work stations - see category 3.

Technicians' offices/workrooms classified elsewhere - see categories 2, 3, 5, 11 and 12.

Offices for deans and directors of major academic divisions and their support personnel - see category 10.

Offices for general university administration - see category 10.

Central duplicating and printing areas - see category 12.

Lounges intended for general use - see category 14.

All space under the administration of the university library system.

5. LIBRARY AND STUDY FACILITIES

Definition

A room or group of rooms used for the acquisition, storage, circulation, study, or use of books, periodicals, manuscripts, and other reading and reference materials generally under the administration of the university library system and accessible to the university population at large, and rooms directly serving these facilities. Refer to Section 1 (pp. 49-50) for notes on the definition of circulation space within libraries.

Subcategories

5.1 Library collection space

Stack and storage areas for books, archives, maps, documents, records, tapes, slides, micromaterials, periodicals, and music scores.

5.2 Study space

Library reading rooms, study carrels, open-stack reading rooms and study areas available to the general university population. These could be located in residences, or in facilities administered by the university library system, or academic departments.

5.3 Library support areas

Office and related areas for library administration, catalogue area, circulation desk, processing areas, bookbinding and repair areas, acquisition and cataloguing work areas, and library staff lounges.

Room types excluded

Media storage for language laboratories - see category 2.

Media storage for audio-visual facilities - see category 11.

Media storage for recreational purposes - see category 14.

Study areas assigned to individuals for their exclusive use in areas not administered by the university library system - see category 4.3.

Special reference libraries and departmental reading rooms not under the control of the university library administration - see categories 4, 11, 12 and 19.

Faculty and instructional areas associated with academic programmes in library science and teacher education - see categories 2 and 3.

6. RECREATION/ATHLETIC SPACE

Definition

All indoor areas used by students, staff, or the public for athletic activities, either for recreational or competitive purposes, and rooms directly serving these facilities.

Subcategories

6.1 Athletic activity areas

Gymnasia, dance studios, swimming pools, basketball, handball and squash courts, combatives rooms, ice rinks, indoor tracks, indoor rifle and archery ranges, and activity areas including those within field houses.

6.2 Athletic seating areas

All permanent seating and observation areas in gymnasia, swimming pools, field houses, ice rinks, and other indoor activity areas.

6.3 Athletic service space

All ancillary areas directly serving the above such as locker rooms, shower rooms, washrooms, coaches' rooms, equipment supply rooms, and rooms serving athletic facilities.

Room types excluded

Laboratories required to support programmes in Physical and Health Education - see categories 2 and 3.

Office and office-related space serving athletic facilities - see category 10.

Office and office-related space in support of programmes in Physical and Health Education - see category 4.

Indoor rifle ranges associated with military training - see category 19.

7. FOOD SERVICE

Definition

A room or group of rooms used for preparing or eating food or which directly serve these facilities including central facilities located in residences and faculty clubs.

Subcategories

7.1 Food Facilities

Dining rooms, cafeterias, snack bars, coffee shops, restaurants, vending machine and other refreshment areas, including student pubs, if they are primarily used for food service.

7.2 Food facilities service

Kitchen, servery, all food preparation areas, dishwashing areas, refrigeration rooms, freezer, and kitchen storage, receiving, refuse areas and staff lunch, locker and private washrooms.

Room types excluded

Office and office-related space which support food service facilities - see category 10.

Refreshment booths in athletic facilities - see category 6.

Kitchen and dining areas located in private living quarters - see category 17.

8. BOOKSTORE AND OTHER MERCHANDISING FACILITIES

Definition

A room or group of rooms used to sell products or services, exclusively or primarily for the university population, and rooms directly serving these facilities.

Subcategory

8.1 Bookstore/Merchandising

Bookstores, Canada Post Office, barber shops, other stores, and associated service space operated by the university or a commercial enterprise renting space from the university. Includes staff offices in support of these functions.

Room types excluded

General-use food service facilities - see category 7.

Departmental and campus mail rooms - see categories 4, 10 and 12.

9. PLANT MAINTENANCE

Definition

Space associated with the operation and maintenance of university buildings, grounds, and other elements of the physical plant.

Subcategory

9.1 Plant maintenance

Shops and storage areas for carpentry, plumbing, painting, electrical and other trades, lunch, locker and change rooms for maintenance and custodial staff, garages for maintenance vehicles and all grounds equipment, greenhouses and related areas.

Room types excluded

Janitorial facilities not listed above - see category 16.

Vocational, technical, and instructional shops in support of academic programmes - see categories 2 and 3.

Office and office-related space - see category 10.

Security-related areas - see category 10.
AV/TV repair shops - see category 11

Central stores - see category 12.

Computer repair shops - see category 12

Central utility plant - see category 16.

10. ADMINISTRATIVE OFFICE AND RELATED SPACE

Definition

A room usually assigned to one or more individuals on a permanent basis containing office-type equipment and used by administrative and support staff, or a room directly serving these facilities.

Subcategories

10.1 Office areas

Single or multiple-occupancy rooms for executives, administrative staff, deans and directors of major academic divisions, associate or vice-deans and their immediate support personnel.

10.2 Office support space

Rooms directly serving office space in this category such as conference rooms, special reference libraries, file rooms, vaults, duplicating rooms, computer rooms for administrative use, waiting and reception areas, interview rooms, storage areas, private toilets, lunch rooms, and private departmental

lounges.

Room types excluded

Office and office-related areas classified elsewhere - see categories 4, 5, 8, 13, 14 and 17.

Central mail, duplicating and printing areas - see category 12.

Lounges intended for general use - see category 14.

11. AUDIO-VISUAL/TELEVISION FACILITIES

Definition

A room or group of rooms used in the production, distribution, and storage of non-print instructional media, and rooms directly serving these facilities, providing campus-wide rather than exclusively departmental services.

Subcategory

11.1 AV/TV facilities

Radio, TV, sound, photography, and graphic studios, film and tape libraries, control rooms, storage rooms, recording rooms, repair and servicing work rooms, dark rooms, preparation rooms, and similar related areas.

Room types excluded

Rooms used primarily in support of an academic programme - see category 2 and 3.

Offices and office-related space serving this category - see category 10.

Printing of instructional media - see category 12.

12. CENTRAL SERVICES

Definition

A room or group of rooms used to provide campus-wide services for both academic and non-academic sections of the university, and rooms directly serving these facilities.

Subcategories

12.1 Computing facilities

Central data processing facilities, computer rooms, key-punch areas, technical service and repair areas and their support spaces.

12.2 Other central services

Central and regional printing and duplicating shops, central receiving areas, central stores, university mail rooms, laundry and drying rooms located in a central laundry, and technical service and repair areas.

12.3 Student Computer Rooms

Computer or terminal rooms available for use by students for non-scheduled instruction or study.

Room types excluded

Data processing facilities and related areas intended for the sole use of the academic and non-academic staff of a single unit - see categories 4.5 and 10.2.

Computer rooms for scheduled instruction - see category 2.1.

Computer rooms for research - see category 3.

Laundry and drying rooms classified elsewhere - see categories 6, 8, 17 and 19.

Office or office-related space serving these facilities - see category 10.

AV/TV repair - see category 11

13. HEALTH SERVICE FACILITIES

Definition

A room or group of rooms intended to supply health services primarily to the general university population, and rooms directly serving these facilities.

Subcategory

13.1 Health service facilities

Student infirmaries, first aid rooms, doctors' offices/examining rooms, their support areas, offices and related areas within health service facilities, and first-aid rooms located elsewhere.

Room types excluded

Laboratory clinics - see categories 2 and 3.

Recreation/Athletic first-aid rooms - see category 6.

Clinic facilities for health science programmes in hospitals or other health care areas - see categories 2, 3 or 20.

14. COMMON USE AND STUDENT ACTIVITY SPACE

Definition

A room or group of rooms accessible to the general university population intended for recreation, rest, or relaxation, or rooms directly serving these facilities.

Subcategories

14.1 Student offices and support space

Offices and support space for student government, publications, and clubs.

14.2 Recreational facilities and service

Bowling alleys, pool and billiard rooms, ping-pong rooms, ballrooms, chess rooms, card playing areas, music listening areas, hobby rooms, storage and equipment issue rooms, pubs not primarily for food service.

14.3 Lounge and service space

All general lounge space and kitchenettes, whether for students, faculty, or administrative staff, lounges in residences if available to non-residents, and lounges in faculty clubs, including related service space.

Room type excluded

Athletic facilities, wherever situated, such as gymnasia, pools, and basketball, handball, and squash courts - see category 6.

Lounge space classified elsewhere - see categories 4, 5, 10, 16 and 17.

Offices for administrative staff concerned with student affairs and services - see category 10.

15. ASSEMBLY AND EXHIBITION FACILITIES

Definition

A room or group of rooms intended to serve the general university population and to be used for dramatic, musical, or devotional activities or for exhibition purposes, and rooms directly serving these facilities.

Subcategories

15.1 Assembly facilities

Theatres, auditoria, concert halls, chapels, and convocation halls and ancillary areas such as checkrooms, coat rooms, ticket booths, concession booths, dressing rooms, projection rooms, storage and control rooms.

15.2 Exhibition facilities

Museums, art galleries, other exhibition areas, greenhouses used for display only and supporting areas.

Room types excluded

Areas for displaying collections intended primarily for instructional and research purposes - see categories 2 and 3.

Assembly facilities for the primary use of academic programmes - see categories 1 and 2.

16. NON-ASSIGNABLE

Definition

A room or area that is not available for assignment to the occupants of a building but which is necessary for the general occupation or mechanical support of one or a number of buildings.

Subcategories

16.1 Central utility plant

All boiler rooms, refrigeration plant, electrical transformer stations, cooling towers, compressing stations, water treatment facilities, incinerator, and their support areas serving more than one building or the entire campus.

16.2 Other non-assignable areas

Areas used or occupied by janitorial staff, circulation

spaces, mechanical and electrical spaces, an incinerator serving one building, and public washrooms.

16.3 Inactive unassignable

Spaces which would require long lead times and extensive work to make them available for occupancy. See p. 49.

Room types excluded

Circulation aisles within office suites, auditoria, or work areas.

Special-purpose storage and maintenance rooms - see categories 9 and 17.

Custodial lunch, locker and change rooms - see category 9.1

Offices for custodial supervisors and plant engineers - see category 10.

17. RESIDENTIAL SPACE

Definition

A room or rooms used to accommodate one or more individuals and the ancillary areas in direct support of such rooms.

Subcategories

17.1 Residence living space

Single or multiple-occupancy bedrooms, and all space within apartments.

17.2 Residence service space

Laundry rooms, recreational areas, music rooms, games rooms, locker rooms, lounges only available to occupants of that residence, tuck shops, and administrative office space in direct support of residences.

Room types excluded

General-use lounges and recreation areas - see category 14.

General-use library and study areas - see category 5.

Food service and merchandising facilities coded elsewhere - see categories 7 and 8.

18. ANIMAL SPACE

Definition

Animal facilities in overall support of teaching or research and not normally integrated with or under the control of academic departments.

Subcategories

18.1 Specialized central areas

Conditioning, rearing, and long-range animal holding areas, and rooms directly serving these facilities.

18.2 Farm-type areas

Barn structures, feed storage, and field service areas.

Room types excluded

Animal areas integrated with or under the control of academic departments and in direct support of teaching or research - see categories 2 and 3.

Specialized facilities within central animal areas which are in direct support of research such as operating suites - see category 3.

19. OTHER UNIVERSITY FACILITIES

Definition

Any room or area not included in categories 1 through 18.

Subcategories

19.1 Day care facilities.

19.2 Rifle ranges and other space in support of military training.

19.3 Merchandising facilities not exclusively or primarily serving the university population.

19.4 Demonstration schools, and other instructional institutions for non-university students.

19.5 Inactive assignable space.

Spaces which are deemed to be available for immediate

occupancy but which have not yet been assigned to individuals or groups.

19.6 Non-institutional agencies occupying university space.

20. Health Science Clinical Facilities

Definition

Space owned or operated by the university that is used in direct support of instruction, research and service for clinical health science disciplines.

To be included:

1. health care areas, such as patient bedrooms and bathrooms, nurses' stations, surgery, treatment rooms, waiting rooms and service and supply areas;

2. all space in support of clinical instruction, research and service;

3. space where the corresponding input measures are not included in Categories 1-15 of the space formula and for which capital funding responsibility is assumed to be that of the Ministry of Health.

Room types excluded

Space occupied by the basic medical sciences, such as Anatomy, Biochemistry, Biophysics, Genetics, Microbiology, Pathology (where non-clinical), Pharmacology and Physiology. See categories 1-15.

Offices occupied by the Chair and associated staff of all clinical teaching departments. See Category 4.

Space occupied by university health service. See Category 13.

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SPACE CLASSIFICATION SCHEME

Section 3 - Glossary

TYPE OF SPACE	DEFINITION	CATEGORY
Animal Space	1. Rearing, conditioning, and holding facilities before animals are ready or required for teaching and research purposes, located either on or off campus.	18,20
	2. Facilities for long-term holding and care of animals following surgical or other investigative treatment, located either on or off campus.	18,20
	3. Short-term holding and care of animals either before or following surgical or other investigative treatment, located on campus and closely related to academic departments.	
	- in support of teaching	2
	- in support of research	3
	4. Animal operating suites either for the use of one or several academic departments, located either on or off campus.	3
Clinical Facilities	1. Formerly known as Z-formula space. All space owned or operated by the university that is used in direct support of instruction, research and service in the clinical disciplines of Medicine and Veterinary Medicine.	
Coatrooms	see Lockers	
Computing Facilities	1. Centrally located and providing campus-wide services to both academic and non-academic sections of the university.	12
	2. Located in space of an academic division for its convenience, in support of instruction, or research, or both, but available also for general use by all sections of the university.	12

TYPE OF SPACE	DEFINITION	CATEGORY
	3. Located in space of an academic division and fully used by that division for combinations of instruction, research, and administration.	12
	4. Located in space of an academic division for a specific use by that division as for example:	
	- for scheduled instruction in the use of computer equipment	2
	- for service to research by departments of the division	3
Demonstration Schools	1. Facilities generally integrated with university facilities, in which children receive regular school instruction and are available for practice teaching and observation.	19
Examination Rooms	1. Space used exclusively or primarily for examination purposes throughout the academic year.	1
	2. Space used only occasionally for examination purposes as for end-of-term examinations, the primary use of which is for other purposes, classified in the category of its primary use as for example:	
	- an arena or gymnasium used for final examinations	6
	- a meeting or assembly hall used for final examinations	15
Greenhouses	1. Primarily in support of undergraduate instruction	2
	2. Primarily in support of graduate instruction and research	3
	3. Primarily in support of university grounds keeping	9
	4. Primarily for exhibition and display purposes	15
	5. For farm use	18

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TYPE OF SPACE	DEFINITION	CATEGORY
Inactive Space	1. Space available for occupancy but not assigned at the time of the survey	19.5
	2. Space not available for occupancy which was left unfinished at the time of construction	16.3
	3. Single rooms or small groups of rooms not available for occupancy due to repairs, renovations, or remodelling to be reported in the category of its intended <u>future</u> use	19.5
	4. Non-institutional agencies occupying university space.	19.6
	5. Buildings under construction are not to be reported.	
Kitchenette	1. For an academic department	4
	2. For an administrative department	10
	3. For general lounge service	14
Class Laboratories	1. Primarily used for scheduled instruction, classified as Scheduled Class Laboratory Space	2
	2. Used in an unknown fashion or intended for scheduled use but just not used at the time of reporting, classified as Scheduled Class Laboratory space	2
	3. Primarily used for informal or irregularly scheduled instruction, and for practice, classified as Unscheduled Class Laboratory Space	2
Language Laboratories	See Class Laboratories.	
Lockers	1. In support of a particular room, classified in the category of the space it supports, as for example:	
	- for a classroom	1
	- for a teaching laboratory	2
	- for a cafeteria	7

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TYPE OF SPACE	DEFINITION	CATEGORY
	2. For the general use of the students in a building	14
	3. Lockers in corridors	16
Lounges	1. For the private use of an academic department	4
	2. For the private use of library staff	5
	3. For the private use of a department in central administration	10
	4. For the general use of students or staff or both regardless of where located	14
	5. For general use in residences	14
	6. For the private use of occupants of residences	17
Lunch, Locker and Change Rooms	1. In support of a particular kind of space to be classified in the category of the space it supports, for example:	
	- for physical education	6
	- for a bowling alley	14
	- for a research lab	3
	2. Provided for the exclusive use of people as necessary in the performance of their jobs, to be classified as the characteristic kind of space for that department, for example:	
	- for food service staff	7
	- for security patrolmen	10
	- for maintenance personnel	9
	- for custodial staff	9
Mail Rooms	1. A central facility for sorting and distributing mail for the campus	12
	2. Canada Post Office	8

TYPE OF SPACE	DEFINITION	CATEGORY
	3. A room for sorting and distributing mail for:	
	- academic departments	4
	- central library	5
	- service departments and central administration	10
Media Storage (Recorded Music)	See Music Scores Storage and Tape Storage	
Merchandising	1. Products or services provided by the university or a commercial enterprise renting space from the university	
	- exclusively or primarily for the university population as for example a textbook store	8
	- exclusively or primarily to the non-university community as for example a bank, public office, or commercial building	19
Music Practice Rooms	See Class Laboratories See Residence	2 17
Music Scores Storage	1. For music studios or practice rooms as part of instruction in music	2
	2. For instruction or research, and located in libraries	5
	3. For music listening and recreation, and available to the university population at large, not in the central library	14
	4. For the exclusive use of occupants of residences	17
Offices	1. For faculty, post-doctoral fellows and other equivalent-to-faculty research appointments, and graduate students.	4

TYPE OF SPACE	DEFINITION	CATEGORY
	2. For the most senior academic administrator in a major division of the university, usually called a dean or director, and their immediate support personnel	10
	3. For academic heads of single academic departments or small groups of closely related programmes, usually called a chairman or department head but sometimes called a dean or director, especially of a school	4
	4. For shared support personnel between the above two categories	10
	5. For departmental support staff	4
	6. For library staff	5
	6. For central administrative staff	10
	7. For managers and administrative staff or merchandising operations providing services exclusively or primarily for the university population	8
	8. For recreation/athletic staff	10
	9. For food service staff	7
	10. For maintenance staff	10
	11. For custodial supervisors	10
	12. For AV-TV staff	10
	13. For central services staff	10
	14. For medical doctors, nurses, and administrative staff engaged in providing health care to students	13
	15. For student clubs or student government	14
	16. For technicians - see Technicians' Space	
	17. For research associates - see Research Assistants' Space	

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TYPE OF SPACE	DEFINITION	CATEGORY
Research Assistants Space	1. Space primarily used as work rooms rather than offices, classified as research support space	3
	2. Space containing only office-type equipment, assigned to individuals, classified as departmental office space	4
Special Reference Libraries	1. Reference libraries and reading rooms, not under the administration of the central library system, usually containing specialized or selected materials or special study facilities classified as part of the space they occupy as for example:	
	- in an academic department	4
	- in computer facilities	12
	- in residences	17
Special Subject Rooms	1. For scheduled instruction in non-laboratory oriented subjects for which the space per station is larger than for a normal classroom to accommodate special arrangement of stations or equipment as for example in faculties of Education and Law	2
Stores and Storage	1. Central receiving and storing of equipment, materials, and supplies for university-wide use	12
	2. Storage areas within individual departments, classified in the category of the space they support as for example:	
	- classroom storage	1
	- department office supplies storage	4
	- building and grounds maintenance storage	9
	- residence storage	17
Study Space	1. Library study space for general or assigned use, under the administration of the university library system	5

TYPE OF SPACE		DEFINITION	CATEGORY
	2.	Departmental study space for general or assigned use, under the administration of the central library system	5
	3.	Departmental study space for general or individual use, but restricted to individuals associated with the department (graduate student offices)	4
	4.	Other departmental study space for undergraduate students in support of laboratory instruction (unschdeuled class lab)	2
	5.	Study space in residences for the exclusive use of the residents and not part of departmental or university library space	17
Tape Storage	1.	In direct support of teaching	2
	2.	In libraries	5
	3.	In support of AV-TV	11
	4.	Computer tape storage	12
Technicians' Space	1.	Space which may contain a desk but is primarily used as a work room rather than an office, classified in the category of space it supports, as for example:	
		- for teaching laboratories technicians	2
		- for research technicians	3
		- for AV-TV technicians	11
		- for technicians in central services	12
	2.	Space containing only office-type equipment, classified in the category of the office space of the department in which the technician works, as for example:	
		- in teaching laboratories	4
		- in research laboratories	4

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TYPE OF SPACE	DEFINITION	CATEGORY
	- in AV-TV	10
	- in central services	10
Unassigned or Unfinished Space	See Inactive Space	
Unscheduled Class Labs	See Class Laboratories	
Z-formula space	See Clinical Facilities	

Appendix C

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Appendix C

LIST OF REVISED INPUT MEASURES

Input Measure	Used for Space Category:
1.0 FTE Students	Category 1. Classroom
	Category 6. Recreation/Athletic
	Student and Central Services: Categories 7,8,11,12,13,14 combined.
1.1 FFTE Undergraduate Students	Category 5. Library - Study
1.2 FTE Graduate Students	Category 3. Laboratory - Graduate and Faculty
	Category 4. Academic Departmental Office
	Category 5. Library - Study
1.3 Professional Students	Category 5. Library - Study
2.0 Laboratory Weekly Student Contact Hour	Category 2: Laboratory - Undergraduate
3.0 FTE Faculty	Category 3. Laboratory - Graduate and Faculty
	Category 4. Academic Departmental Office
4.0 Other Research Appointments	Category 3. Laboratory - Graduate and Faculty
5.0 FTE Non-Academic Office Staff	Categories 4 and 10. Office
6.0 Total Net Assignable Inventory	Category 9. Plant Maintenance

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7.0 Library Collections
(Equivalent Volumes)

Category 5. Library - Stack

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Definition of Input Measures

The following definitions identify seven major groups of input measures that are used in determining the space requirements of an institution. The names of the input measures may be readily recognized as being in common university use, but are not always valid for inter-institutional comparison unless detailed descriptions of the terms and, in some cases, the possible end uses are specified.

INPUT MEASURES

1.0 FTE Students

1.1 FFTE Undergraduate Students

1.2 FTE Graduate Students

The definitions for student enrolment currently contained in the MCU Operating Formula Manual will govern the input measures as they pertain to students. Thus, the FTE student count will be consistent with the numbers reported to the Ministry via the USIS-UAR tape submission as of November 1.

The number of FTE students reported will be the sum of:

1) eligible fall term FFTE undergraduate students x 2;

2) eligible and ineligible GFTE graduate students;

3) such adjustments as may be required because of affiliated institutions.

Notes and special considerations:

For those universities that do not distinguish enrolment of affiliated institutions on a separate tape, the enrolment of affiliates should be excluded when the related space is not included in a reporting university's inventory.

For universities providing teaching services to affiliated church colleges, the enrolment is to be determined after allowing for the net services provided: for the students receiving instruction both from the university and from the affiliated college, or for programmes where instruction is provided by both institutions. The fiscal full-time equivalency rules are to be applied to the course registrations, to determine the new enrolment.

The inclusion of the ineligible graduate students is appropriate,

in order to take into account all students who are making substantial demands on university facilities.

1.3 Professional Students

Enrolments for professional programmes (used as an input measure for the generation of library study space) are the count of students in post-baccalaureate programmes leading to a professional degree. These programmes are Dentistry, Education (not concurrent), Law, Medicine, Optometry, Pharmacy and Veterinary Medicine.

2.0 Laboratory Weekly Student Contact Hours

Definition:

The total weekly-student-contact-hours of instruction offered by a university as part of a programme of studies leading to a degree or diploma. The contact hours are computed as the product of the course enrolment and the hours of scheduled instruction received by each enrolled student during a typical academic week.

Laboratory weekly-student-contact-hours pertain to those contact hours of courses or portions of courses in which the instructional activity is facilitated by demonstration or experimentation requiring additional equipment not ordinarily available in classrooms.

This would normally include courses requiring the use of language laboratories, the subject classrooms of faculties of education, visual arts and other studios, the teaching of musical instruments, and didactic practice of a sport activity, as well as the traditional engineering, physical and biological science laboratories described in the Space Classification Scheme under category 2.

A contact hour is the time that the instructor of the course (or lab assistant) is supervising a formal laboratory session in a specialized teaching facility. Make up hours, or project time over and above formal instruction time are not counted.

Notes and special considerations:

The course enrolment is the number of students participating in the instructional activities of the course.

Sources of data for establishing contact hours can be the university timetable if it contains accurate and detailed information on instructional hours, and type of teaching provided; a separate survey of annual teaching activities and corroborating

registration data; or the course description (with hour requirements) contained in the university calendar, times course enrolments.

The reporting week of a university is to be any representative week of the Fall term. This will correspond with the student enrolment as of November 1.

3.0 FTE Faculty

The university's faculty count is to include all persons, up to and including department heads or chairmen, holding an academic appointment, who receive remuneration via the university from all salary funding sources.

The university may designate each member of faculty as full-time or part-time, but such designation should be made with consideration of the expected contribution of the member's time required to fulfil assigned responsibilities.

The full-time equivalent of part-time faculty is derived by dividing the total salary paid to part-time faculty by the average salary of all university full-time faculty.

Notes and special considerations

The term academic appointment will normally be limited to those persons who are in or above that rank which is immediately below that of Assistant Professor, as consistent with Statistics Canada reporting.

Included are visiting appointments and faculty on sabbatical or study leave of at least three months' duration.

Excluded are post-doctoral fellows, clinical staff with full- or (the part-time portion of) part-time hospital appointments and faculty on unpaid leaves of absence, deans, vice-presidents and presidents.

4.0 Other Research Appointments

Definition

Generators of research who are not regular faculty as defined in 3.0, but who have similar research space requirements. This category includes post-doctoral fellows at any salary, and other equivalent-to-faculty research appointments, only if the annualized salary paid via the university (irrespective of funding source) is equal to or higher than the floor of the assistant professor range

at that institution. The count date should be 1 October, or another date that accurately reflects demand during the Fall session. Since researchers who are at the university for a short time will normally not require separate space, the count should be limited to appointments of at least three months' duration.

Notes and special considerations

Exclude individuals already under other categories, such as faculty, graduate students, laboratory technicians and research assistants.

5.0 FTE Non-Academic Office Staff

Definition

The full-time equivalent of all filled established positions for secretarial, clerical, professional and management staff with appointments of at least three months' duration as of 1 October. This will include non-academic office staff in teaching and research units, central computing and data processing, physical plant, student services, academic services and administration, not included in other categories. Staff of ancillary operations, and federated and affiliated institutions are excluded.

This definition is based on the instructions for the annual reporting of data to COU on non-academic employees, except that staff paid via the university from all funding sources, rather than operating funds only, will be included. Positions which are full-time for 8 months would be counted as .67. Similarly, half-time positions for 12 months would be counted as .50.

Notes and special considerations:

Staff having offices inventoried in categories 4.0 (Academic Office) or 10.0 (Administrative Office) are included. Staff having offices inventoried in other categories: 5.0 (Library), 8.0 (Bookstore/Merchandizing, 13.0 (Health Service) and 17.0 (Residence) are excluded. Academic administrators or professionals already counted as FTE faculty or as other research appointments are also excluded.

6.0 Total Net Assignable Inventory

All net assignable space inventory for Categories 1-20, excluding Category 16.

7.0 Library Collections (Equivalent Volumes)

The library materials identified in the university library catalogue and contained in the following tables are to be included at the stated volume equivalency rate.

Material	Items		Equivalency
For Material Stored on Horizontal Storage Units			
Volumes - excluding reference	125		125
Computer tapes	125		125
Documents, pamphlets	1,000	(items)	125
Archives	18	(boxes)*	125
Microfilm - boxed on shelves	400	(reels)	125
Microprint - boxed on shelves	50	(boxes)	125
Newspapers - current titles on display	7	(titles)	125
Newspapers - unbound back files	7	(titles)	125
Newspapers - bound back files	9	(volumes)	125
Periodicals - unbound titles on display	18	(titles)	125
Periodicals - boxed current year	50	(boxes)	125
Periodicals - boxed back files	50	(boxes)	125
Periodicals & Abstracts - bound	50	(volumes)	125
Reference	45	(volumes)	125
Atlases	20		125
Sheet Music	250	(pieces)	125
Instructional Kits	45		125
Slides - carousel boxes	75	(carousels)	125
Films	125	(films)	125
Filmstrips (boxed)	2,250	(strips)	125
Videotapes	125		125

*Hollinger Box - Legal Size

For Material in Vertical Storage Units			
Maps	400		125
Microfilm (reels)	315		125
Microprint	11,000	(cards)	125
Pamphlets	790	(pamphlets)	125
Phonodiscs - records	500		125
- tapes	500		125
- cassettes	650		125
Slides (in cases)			
- bound	2,560	(slides)	125
- unbound	5,120	(slides)	125
Filmstrips	580	(strips)	125
Mounted Photos	790	(photos)	125
Satellite Images/Aerial Photos	7,000		125

Appendix D

Appendix D

REVISED COU SPACE GUIDELINES
(1987)

1.	Classrooms		1.2 NASM per FTE student
2.	Class Labs:	Group W	0.8 NASM per weekly contact hour
		Group X	0.6 NASM per weekly contact hour
		Group Y	0.5 NASM per weekly contact hour
		Group Z	0.3 NASM per weekly contact hour
3.	Research	Group A	45 NASM per input measure (FTE faculty +.5 other research appointments +.5 grads.)
		Group B	30 NASM per input measure
		Group C	20 NASM per input measure
		Group D	10 NASM per input measure
		Group E:	1 NASM per input measure
4.	Academic Office		13.0 NASM per FTE Faculty (plus an additional allowance of 15% for acadmics not included in the faculty count)
			5.0 NASM per FTE graduate student
5.	Administrative Office		13.0 NASM per FTE non-academic staff requiring offices
	Office Service		0.30 x total generated for faculty, graduate students and non-academic office staff
6.	Library		
	Stack		For compact storage:
			0.004 NASM per equivalent vol. for 10% of total collection
			For remainder of collection:
			0.007 NASM per equivalent vol. for 0-300,000 vols.
			0.006 NASM per equivalent vol. for 300,000-600,000 vols.
			0.005 NASM per equivalent vol. for

	Study	0.5 NASM per FFTE undergraduate 1.0 NASM per FFTE prof. undergraduate 0.7 NASM per FTE graduate student
	Service	
7.	Athletics	0 .25 x (Stack and Study) 0.9 NASM per FTE student, plus 2,000 NASM for institutions with less than 4,000 FFTE 1,000 NASM for institutions with 4,000 to 8,000 FFTE
8.	Maintenance Shops	0.015 x (total NASM inventory)
9.	Student and Central Services	2.0 NASM per FTE student
	(benchmark space factors ranges)	
	Food Service	0.5 - 0.7 NASM per FTE student
	Merchandising and Bookstore	0.1 - 0.2 NASM "
	Audio/Visual	0.05 - 0.1 NASM "
	Computer, Shops and Stores	0.1 - 0.3 NASM "
	Health Service	0.03 - 0.05 NASM "
	Common Use and Student Activity	0.5 - 0.7 NASM "
	Assembly and Exhibition	0.15 - 0.40 NASM "

PART II

INVENTORY OF PHYSICAL FACILITIES OF ONTARIO UNIVERSITIES

1986-87

INTRODUCTION

The 1986-87 Inventory of Physical Facilities of Ontario Universities presents the results of a survey of activities and space conducted in accordance with guidelines and definitions developed by the Task Force to Review Space Standards, which was established in January 1985. The Task Force's recommendations are presented in Part I of this report, **1987 Refinements to the COU Space Standards**.

This is the latest in a series of triennial surveys that have been conducted by COU using space standards originally developed by the Task Force - Space and Utilization and published in volume 1 of the **Building Blocks** series of reports. The work of this Task Force was continued by the Subcommittee on Revisions to Building Blocks, established in November 1972. Its revisions to the space standards were published in December 1978 as Volume 6 of **Building Blocks**.

The following tables present inventory data as of 1 November 1986 based on institutional submissions received in Spring and Summer 1987. Any differences between institutional totals in the tables are due to rounding.

Table 1 is a summary of all net assignable square metres (NASM), by institutions, for categories of space covered by COU space standards (categories 1-15) and for categories of space in which standards do not apply (categories 17-20). The column labeled "Under Construction" includes data on space reported in categories

1-15 which was under construction as of November 1, 1986. The column labeled "Scheduled for Demolition provides an indication of the NASM reported in categories 1-15 which institutions are presently planning to demolish. The column labeled "Privately Funded" includes NASM (categories 1-15) for construction which has been privately funded and for space constructed prior to November 1971 which was not included in the "allocation inventory" that constituted a factor in the interim capital formula. The column labeled "NASM Rentals" reflects the space reported in categories 1-15 which was being rented as of November 1986. The rental costs associated with this space, for the 1986-87 fiscal year are reported in the column "Rental Costs".

Table 2 presents a detailed breakdown of all NASM, by institutions, for each of the 20 space categories defined by the Subcommittee on Space and Coding.

Table 3 presents a distribution of NASM (categories 1-15) by age and excluding rentals. Age was determined according to the year of completion of a building cited or the year of major renovation. The final column, "Average Age" is a weighted average.

Tables 4-22 present institutional space requirements as measured by COU revised space standards by comparison to actual inventory. It should be noted that the data in these and all subsequent tables include space under construction, space scheduled for demolition, privately funded space and rentals. Further, no provision for age or quality has been made. Please note that data in Table 13 for

the St. George campus of the University of Toronto are unconfirmed by that institution. **Tables 23-32** provide analyses of space generated and inventoried by space type.

Table 33 summarizes space generated and space inventoried per FTE student.

Table A1 -A5: Institutional space requirements and actual inventory for Algoma, Nipissing, Hearst and OCA are presented in Appendix A. In the opinion of the Task Force to Review Space Standards, the COU standards cannot for all categories be applied to to very small or special purpose institutions. Until decisions are made at the policy and funding levels about the way to calculate space (and therefore capital) entitlement for these institutions, they will not be included in the summary tables.

Table 5A presents space requirements and inventory based on the official submission for the St. George campus of the University of Toronto. Input measures and the space inventory for the arts and science components of the federated colleges are included. These data were confirmed by the university. The data contained in Table 13 exclude the federated colleges, in compliance with established space reporting guidelines. The question of including federated college activity and space is discussed in section 2.2 of the Task Force report (above, p.8). Other universities with federated colleges (Laurentian, Ottawa, Waterloo and Western) were not asked to provide similar data.

Table 1

INVENTORY OF UNIVERSITY SPACE, November 1, 1986

INSTITUTION	NASM CATEGORIES 1-15	NASM CATEGORIES 17-20	SCHEDULED FOR DEMOLITION	UNDER CONSTRUCTION	PRIVATELY FUNDED	NASM RENTALS	RENTAL COSTS
Brock	43,353	7,041	0	0	445	0	0
Carleton	105,538	21,596	0	0	0	0	0
Guelph	167,211	78,330	15,939	387	8,707	920	34,749
Lakehead	44,982	9,907	349	0	0	0	0
Laurentian	40,765	23,398	0	1,022	0	0	0
McMaster	156,493	108,016	0	0	5,837	295	27,600
Ottawa	143,915	28,375	5,170	0	11,153	1,633	180,000
Queen's	174,463	90,895	0	4,000	26,928	1,068	0
Ryerson	90,970	5,604	0	0	0	266	47,892
Toronto - St. George	377,672	67,060	22,029	17,007	29,487	3,851	623,454
Toronto - Erindale	37,171	13,290	0	0	0	0	0
Toronto - Scarborough	32,338	10,271	0	0	0	0	0
Trent	30,594	18,054	0	0	0	0	0
Waterloo	157,813	77,291	0	10,792	13,653	3,219	210,145
Western	209,477	69,428	0	0	7,851	0	0
WLU	37,005	13,413	1,369	7,622	4,996	682	63,500
Windsor	99,080	24,791	3,812	0	10,403	1,185	53,205
York - Main	148,504	67,415	0	0	410	1,102	84,351
York - Glendon	14,898	7,436	0	0	0	0	0
TOTAL	2,112,242	741,610	48,668	49,830	119,870	14,221	1,324,896

Table 2

DISTRIBUTION OF NASM BY MAJOR SPACE CATEGORY AND INSTITUTION, 1986-87

	Classroom Facilties	Lab. Undergrad	Lab. Grad & Faculty	Acad. Office & Related	Library & Study Facilties	Recreatn/ Athletic Space	Food Service	Bookstore & Merch. Facilties	Plant Maintnce	Admin. Office & Related	AV/TV Facilties	Central Services
Brock	4,316	5,879	4,179	6,217	4,440	7,075	1,618	590	1,253	2,488	266	1,086
Carleton	12,162	16,612	8,646	21,450	10,736	8,206	6,593	1,537	1,771	8,194	934	3,042
Guelph	11,803	25,554	43,749	22,942	12,265	7,829	6,703	2,112	5,737	15,164	814	3,326
Lakehead	4,350	11,043	2,911	4,656	5,166	5,477	2,400	528	783	2,407	218	1,184
Laurentian	5,662	5,379	1,807	5,138	6,231	6,318	2,908	508	655	2,661	536	987
McMaster	13,904	15,689	34,820	27,307	20,150	8,513	6,094	1,916	3,528	10,296	851	6,264
Ottawa	14,867	16,773	18,287	31,653	17,164	8,499	3,403	2,247	1,457	14,101	1,249	3,150
Queen's	16,202	32,445	23,098	29,704	21,700	12,888	6,907	3,159	2,762	11,449	229	2,393
Ryerson	11,622	30,867	0	10,158	9,008	3,506	4,320	667	2,229	7,180	1,618	2,558
Toronto - St. George	31,736	48,743	69,258	68,811	60,154	27,181	10,733	3,528	5,487	27,263	1,700	2,943
Toronto - Erindale	4,825	5,764	5,567	4,714	3,726	2,396	2,393	479	605	1,970	207	1,132
Toronto - Scarborough	3,123	5,923	4,009	3,334	2,896	3,955	1,651	348	1,055	1,931	546	733
Trent	2,458	3,530	2,631	3,842	5,362	3,413	3,452	93	341	2,577	196	456
Waterloo	14,301	22,940	28,332	27,295	13,557	8,910	8,042	2,079	5,215	11,469	560	6,253
Western	20,328	29,481	29,565	36,941	25,835	13,945	10,009	2,791	5,329	17,003	624	5,535
WLU	5,224	2,508	1,103	4,551	6,098	4,513	2,021	625	1,002	3,721	271	1,211
Windsor	9,485	17,156	9,792	14,630	14,987	10,600	3,543	1,486	2,015	6,327	1,856	1,302
York - Main Campus	18,865	13,822	12,006	29,369	22,794	7,173	8,699	3,604	1,609	16,946	923	3,374
York - Glendon	1,739	937	292	2,432	2,161	3,122	1,167	397	289	1,053	12	181
TOTAL	206,972	311,046	300,052	355,143	264,431	153,520	92,746	28,694	43,122	164,200	13,609	47,110

Table 2 (cont'd)

	Health Service Facilities	Common Use & Student Activity Space	Assmbly & Exhibitn Facilties	SUBTOTAL -FORMULA AREAS	Non-Assignble	Residentl Space	Animal Space	Other	Hlth Sci. Clinical Facilties	SUB-TOTAL NON-FORMLA	TOTAL
Brock	87	1,383	2,476	43,353	39,543	6,768	0	273	0	46,584	89,936
Carleton	539	3,941	1,174	105,538	66,854	21,272	0	324	0	88,450	193,988
Guelph	277	5,343	3,503	167,211	120,221	69,760	2,778	2,758	5,442	200,958	368,169
Lakehead	65	2,020	1,776	44,984	28,773	9,595	0	415	0	38,783	83,767
Laurentian	67	474	1,434	40,765	1,741	22,949	449	0	0	25,139	65,904
McMaster	222	5,462	1,477	156,493	77,597	39,597	0	2,948	65,471	185,613	342,106
Ottawa	342	6,925	3,799	143,916	92,976	20,503	913	4,147	2,783	121,321	265,237
Queen's	748	6,521	4,073	174,276	116,511	75,027	1,696	5,092	8,439	206,765	381,041
Ryerson	139	4,653	2,444	90,970	15,087	0	0	5,604	0	20,692	111,662
Toronto - St. George	852	11,210	8,377	377,977	236,962	32,541	0	26,955	9,075	305,534	683,511
Toronto - Erindale	113	2,122	1,160	37,172	28,626	13,011	0	280	0	41,916	79,088
Toronto - Scarborough	72	1,768	305	31,650	21,965	8,326	0	1,945	0	32,236	63,886
Trent	85	2,012	146	30,594	24,547	17,406	0	648	0	42,601	73,195
Waterloo	611	5,651	2,603	157,818	110,819	74,644	0	1,681	968	188,112	345,930
Western	1,371	6,785	3,935	209,477	115,015	62,867	1,604	4,957	0	184,443	393,920
WLU	168	2,705	1,284	37,005	21,841	13,403	0	10	0	35,254	72,259
Windsor	203	4,435	1,263	99,080	47,400	23,863	0	929	0	72,191	171,271
York - Main Campus	148	6,343	2,831	148,505	102,549	65,238	0	2,177	0	169,964	318,468
York - Glendon	98	893	125	14,898	11,340	7,349	0	87	0	18,775	33,673
TOTAL	6,206	80,647	44,185	2,111,681	1,280,366	584,118	7,440	61,229	92,177	2,025,330	4,137,011

Table 3

AGE PROFILE OF ONTARIO UNIVERSITY SPACE
(as of 1 November, 1986)*

INSTITUTION	NASM 0-9 YEARS	NASM 10-19 YEARS	NASM 20-29 YEARS	NASM 30-39 YEARS	NASM 40-49 YEARS	NASM 50+ YEARS	TOTAL NASM	AVERAGE AGE
Brock	208	42,510	635	0	0	0	43,353	15.32
Carleton	935	55,773	48,830	0	0	0	105,538	19.35
Guelph	5,132	84,560	37,449	8,835	993	29,323	166,291	29.01
Lakehead	0	31,659	7,964	5,360	0	0	44,982	19.10
Laurentian	76	27,111	13,578	0	0	0	40,765	17.69
McMaster	7,051	90,290	41,855	12,322	1,569	3,112	156,198	19.86
Ottawa	23,986	60,005	17,174	13,638	0	27,478	142,281	26.64
Queen's	39,287	74,831	47,450	4,018	0	7,809	173,395	17.83
Ryerson	11,088	47,743	31,873	0	0	0	90,704	17.60
Toronto - St. George	46,302	127,948	108,377	20,817	0	70,377	373,821	28.60
Toronto - Erindale	0	37,098	73	0	0	0	37,171	15.33
Toronto - Scarborough	0	32,156	182	0	0	0	32,338	15.19
Trent	3,902	24,298	205	0	155	2,034	30,594	21.20
Waterloo	9,510	80,142	64,942	0	0	0	154,594	18.46
Western	13,828	98,181	71,844	25,624	0	0	209,477	22.17
WLU	7,545	16,599	10,218	1,961	0	0	36,323	15.21
Windsor	13,882	46,725	31,910	0	2,226	3,151	97,895	18.91
York - Main Campus	8,789	102,982	35,631	0	0	0	147,402	16.47
York - Glendon	0	0	13,538	0	0	1,360	14,898	26.60
TOTAL	191,521	1,080,611	583,728	92,573	4,942	144,645	2,098,021	21.84

* Excludes Rentals.

Table 4

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

BROCK

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	5,516.20	1.2	6,619.44	4,316.20	65.2
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	6,607.00	0.6	3,964.20	3,938.70	
Lab Contact Hours Y	5,143.50	0.5	2,571.75	1,283.30	
Lab Contact Hours Z	2,612.50	0.3	783.75	656.80	
Total Class Lab			7,319.70	5,878.70	80.3
RESEARCH					
Research Disciplines A	62.35	45.0	2,805.75	3,644.10	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	23.99	20.0	479.80	405.10	
Research Disciplines D	41.82	10.0	418.20	129.70	
Research Disciplines E	328.07	1.0	328.07	0.00	
Total Research			4,031.82	4,178.90	103.6
OFFICE - ACADEMIC					
Total FTE Faculty	333.53	13.0	4,335.89		
Faculty Supplement	50.03	13.0	650.38		
Total FTE Grads	238.40	4.0	953.60		
Office Service	5,939.87	0.3	1,781.96		
Total Academic Office				6,217.40	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	273.00	13.0	3,549.00		
Office Service	3,549.00	0.3	1,064.70		
Total Admin. Office				2,486.20	
Total Office			12,335.54	8,705.60	70.6
LIBRARY					
10% of Total Eq. Volumes	53,984.30	0.004	215.94		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	185,858.70	0.006	1,115.15		
Remainder	(0.00)	0.005	(0.00)		
Total Stack	539,843.00		3,431.09	2,658.70	77.5
FTE UG - Excl. Prof.	4,761.20	0.5	2,380.60		
FTE UG - Professional	516.60	1.0	516.60		
FTE Grads	238.40	0.7	166.88		
Total Study	5,516.20		3,064.08	1,109.40	36.2
Stack & Study	6,495.17	0.25	1,623.79	672.10	41.4
Total Library			8,118.96	4,440.20	54.7
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	5,516.20				
Total FTE Students	5,516.20	0.9	4,964.58		
Total P.E./Athletics			5,964.58	7,075.30	118.6
MAINTENANCE SHOPS					
Total NASM Inventory	50,394.40	0.015	755.92	1,252.50	165.7
STUDENT AND CENTRAL SERVICES					
Total FTE Students	5,516.20	2.0	11,032.40	7,505.30	68.0
TOTAL FORMULA AREAS			56,178.35	43,352.70	77.2

Table 5

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

CARLETON

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	12,659.14	1.2	15,190.98	12,162.48	80.1
CLASS LABS					
Lab Contact Hours W	4,858.00	0.8	3,886.40	2,258.13	
Lab Contact Hours X	19,633.00	0.6	11,779.80	12,308.51	
Lab Contact Hours Y	1,477.00	0.5	738.50	783.73	
Lab Contact Hours Z	1,968.00	0.3	590.40	1,261.28	
Total Class Lab			16,995.10	16,611.62	97.7
RESEARCH					
Research Disciplines A	148.29	45.0	6,673.05	4,571.84	
Research Disciplines B	164.42	30.0	4,932.45	1,874.94	
Research Disciplines C	85.85	20.0	1,717.00	1,269.81	
Research Disciplines D	64.15	10.0	641.50	598.61	
Research Disciplines E	928.38	1.0	928.38	330.71	
Total Research			14,892.38	8,645.92	58.1
OFFICE - ACADEMIC					
Total FTE Faculty	644.73	13.0	8,381.49		
Faculty Supplement	98.71	13.0	1,257.22		
Total FTE Grads	1,444.20	4.0	5,776.80		
Office Service	15,415.51	0.3	4,624.65		
Total Academic Office				21,450.32	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	451.85	13.0	5,874.05		
Office Service	5,874.05	0.3	1,762.22		
Total Admin. Office				8,194.09	
Total Office			27,676.43	29,644.41	107.1
LIBRARY					
10% of Total Eq. Volumes	162,201.00	0.004	648.80		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	859,809.00	0.005	4,299.05		
Total Stack	1,622,010.00		8,847.85	5,520.42	62.4
FTE UG - Excl. Prof.	11,214.94	0.5	5,607.47		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	1,444.20	0.7	1,010.94		
Total Study	12,659.14		6,618.41	2,367.13	35.8
Stack & Study	15,466.26	0.25	3,866.56	2,848.33	73.7
Total Library			19,332.82	10,735.88	55.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	12,659.14	0.9	11,393.22		
Total P.E./Athletics			11,393.22	8,205.79	72.0
MAINTENANCE SHOPS					
Total NASM Inventory	127,133.63	0.015	1,907.00	1,771.29	92.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	12,659.14	2.0	25,318.27	17,760.56	70.1
TOTAL FORMULA AREAS			132,706.19	105,537.95	79.5

Table 6

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

GUELPH

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	10,578.05	1.2	12,693.66	11,802.83	93.0
CLASS LABS					
Lab Contact Hours W	19,235.30	0.8	15,388.24	9,684.42	
Lab Contact Hours X	32,476.00	0.6	19,485.60	10,594.64	
Lab Contact Hours Y	4,001.00	0.5	2,000.50	2,050.58	
Lab Contact Hours Z	5,227.00	0.3	1,568.10	600.48	
Total Class Lab			38,442.44	25,554.28	66.5
RESEARCH					
Research Disciplines A	714.87	45.0	32,169.15	34,646.99	
Research Disciplines B	33.42	30.0	1,002.60	1,314.67	
Research Disciplines C	54.65	20.0	1,093.00	499.79	
Research Disciplines D	154.03	10.0	1,540.30	3,731.99	
Research Disciplines E	374.66	1.0	374.66	532.97	
Total Research			36,179.71	43,748.53	120.9
OFFICE - ACADEMIC					
Total FTE Faculty	851.09	13.0	11,064.17		
Faculty Supplement	127.66	13.0	1,659.63		
Total FTE Grads	1,051.40	4.0	4,205.60		
Office Service	16,929.40	0.3	5,078.82		
Total Academic Office				22,942.38	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,269.82	13.0	16,507.66		
Office Service	16,507.66	0.3	4,952.30		
Total Admin. Office				15,163.83	
Total Office			43,468.17	38,106.19	87.7
LIBRARY					
10% of Total Eq. Volumes	241,858.70	0.004	967.43		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,576,728.30	0.005	7,883.64		
Total Stack	2,418,587.00		12,751.08	5,588.87	43.8
FTE UG - Excl. Prof.	9,064.25	0.5	4,532.13		
FTE UG - Professional	462.40	1.0	462.40		
FTE Grads	1,051.40	0.7	735.98		
Total Study	10,578.05		5,730.51	4,157.37	72.5
Stack & Study	18,481.58	0.25	4,620.40	2,518.62	54.5
Total Library			23,101.98	12,264.86	53.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	10,578.05	0.9	9,520.25		
Total P.E./Athletics			9,520.25	7,829.01	82.2
MAINTENANCE SHOPS					
Total NASM Inventory	245,540.77	0.015	3,683.11	5,737.19	155.8
STUDENT AND CENTRAL SERVICES					
Total FTE Students	10,578.05	2.0	21,156.10	22,167.89	104.8
TOTAL FORMULA AREAS			188,245.42	167,210.79	88.8

Table 7

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

LAKEHEAD

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	3,873.92	1.2	4,648.70	4,350.00	93.6
CLASS LABS					
Lab Contact Hours W	1,529.00	0.8	1,223.20	3,457.00	
Lab Contact Hours X	7,790.00	0.6	4,674.00	5,313.00	
Lab Contact Hours Y	1,724.50	0.5	862.25	1,510.00	
Lab Contact Hours Z	1,892.00	0.3	567.60	616.00	
Total Class Lab			7,327.05	11,043.00	150.7
RESEARCH					
Research Disciplines A	54.35	45.0	2,445.75	1,812.00	
Research Disciplines B	61.05	30.0	1,831.50	484.00	
Research Disciplines C	28.20	20.0	564.00	213.00	
Research Disciplines D	29.40	10.0	294.00	71.00	
Research Disciplines E	147.85	1.0	147.85	0.00	
Total Research			5,283.10	2,911.00	55.1
OFFICE - ACADEMIC					
Total FTE Faculty	245.70	13.0	3,194.10		
Faculty Supplement	36.86	13.0	479.12		
Total FTE Grads	171.30	4.0	685.20		
Office Service	4,358.42	0.3	1,307.52		
Total Academic Office				4,656.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	337.00	13.0	4,381.00		
Office Service	4,381.00	0.3	1,314.30		
Total Admin. Office				2,407.00	
Total Office			11,361.24	7,063.00	62.2
LIBRARY					
10% of Total Eq. Volumes	54,118.90	0.004	216.48		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	187,070.10	0.006	1,122.42		
Remainder	(0.00)	0.005	(0.00)		
Total Stack	541,189.00		3,438.90	2,312.00	67.2
FTE UG - Excl. Prof.	3,702.62	0.5	1,851.31		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	171.30	0.7	119.91		
Total Study	3,873.92		1,971.22	1,728.00	87.7
Stack & Study	5,410.12	0.25	1,352.53	1,126.00	83.3
Total Library			6,762.65	5,166.00	76.4
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	3,873.92				
4,000-8,000 Enrol.	0.00				
Total FTE Students	3,873.92	0.9	3,486.53		
Total P.E./Athletics			5,486.53	5,477.00	99.8
MAINTENANCE SHOPS					
Total NASM Inventory	54,994.00	0.015	824.91	783.00	94.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	3,873.92	2.0	7,747.84	8,191.00	105.7
TOTAL FORMULA AREAS			49,442.02	44,984.00	91.0

Table 8

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

LAURENTIAN

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	3,962.32	1.2	4,754.78	5,662.00	119.1
CLASS LABS					
Lab Contact Hours W	770.00	0.8	616.00	0.00	
Lab Contact Hours X	6,857.00	0.6	4,114.20	0.00	
Lab Contact Hours Y	2,136.00	0.5	1,068.00	0.00	
Lab Contact Hours Z	3,074.00	0.3	922.20	0.00	
Total Class Lab			6,720.40	5,379.00	80.0
RESEARCH					
Research Disciplines A	66.50	45.0	2,992.50	0.00	
Research Disciplines B	18.00	30.0	540.00	0.00	
Research Disciplines C	17.00	20.0	340.00	0.00	
Research Disciplines D	40.00	10.0	400.00	0.00	
Research Disciplines E	188.80	1.0	188.80	0.00	
Total Research			4,461.30	1,807.00	40.5
OFFICE - ACADEMIC					
Total FTE Faculty	266.00	13.0	3,458.00		
Faculty Supplement	39.90	13.0	518.70		
Total FTE Grads	147.60	4.0	590.40		
Office Service	4,567.10	0.3	1,370.13		
Total Academic Office				5,138.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	239.00	13.0	3,107.00		
Office Service	3,107.00	0.3	932.10		
Total Admin. Office				2,661.00	
Total Office			9,976.33	7,799.00	78.2
LIBRARY					
10% of Total Eq. Volumes	95,230.10	0.004	380.92		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	257,070.90	0.005	1,285.35		
Total Stack	952,301.00		5,566.27	2,961.00	53.2
FTE UG - Excl. Prof.	3,673.43	0.5	1,836.72		
FTE UG - Professional	141.29	1.0	141.29		
FTE Grads	147.60	0.7	103.32		
Total Study	3,962.32		2,081.32	1,714.00	82.4
Stack & Study	7,647.60	0.25	1,911.90	1,556.00	81.4
Total Library			9,559.50	6,231.00	65.2
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	3,962.32				
4,000-8,000 Enrol.	0.00				
Total FTE Students	3,962.32	0.9	3,566.09		
Total P.E./Athletics			5,566.09	6,318.00	113.5
MAINTENANCE SHOPS					
Total NASM Inventory	64,163.00	0.015	962.45	655.00	68.1
STUDENT AND CENTRAL SERVICES					
Total FTE Students	3,962.32	2.0	7,924.64	6,914.00	87.2
TOTAL FORMULA AREAS			49,925.49	40,765.00	81.7

Table 9

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

McMASTER

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	12,104.10	1.2	14,524.92	13,904.00	95.7
CLASS LABS					
Lab Contact Hours W	3,393.00	0.8	2,714.40	1,552.00	
Lab Contact Hours X	18,208.00	0.6	10,924.80	10,000.00	
Lab Contact Hours Y	4,287.00	0.5	2,143.50	2,312.00	
Lab Contact Hours Z	5,591.00	0.3	1,677.30	1,695.00	
Total Class Lab			17,460.00	15,689.00	89.9
RESEARCH					
Research Disciplines A	459.55	45.0	20,679.75	22,589.00	
Research Disciplines B	308.70	30.0	9,260.96	7,063.00	
Research Disciplines C	46.35	20.0	927.00	2,871.00	
Research Disciplines D	112.80	10.0	1,126.00	899.00	
Research Disciplines E	681.15	1.0	681.15	66.00	
Total Research			32,674.86	34,820.00	106.6
OFFICE - ACADEMIC					
Total FTE Faculty	1,023.00	13.0	13,299.00		
Faculty Supplement	153.45	13.0	1,994.85		
Total FTE Grads	1,427.30	4.0	5,709.19		
Office Service	21,003.04	0.3	6,300.91		
Total Academic Office				27,307.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,111.00	13.0	14,443.00		
Office Service	14,443.00	0.3	4,332.90		
Total Admin. Office				10,296.00	
Total Office			46,079.85	37,603.00	81.6
LIBRARY					
10% of Total Eq. Volumes	207,717.80	0.004	830.87		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,269,460.20	0.005	6,347.30		
Total Stack	2,077,178.00		11,078.17	12,002.00	108.3
FTE UG - Excl. Prof.	10,005.25	0.5	5,002.63		
FTE UG - Professional	671.55	1.0	671.55		
FTE Grads	1,427.30	0.7	999.11		
Total Study	12,104.10		6,673.28	4,245.00	63.6
Stack & Study	17,751.46	0.25	4,437.86	3,903.00	87.9
Total Library			22,189.32	20,150.00	90.8
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	12,104.10	0.9	10,893.69		
Total P.E./Athletics			10,893.69	8,513.00	78.1
MAINTENANCE SHOPS					
Total NASM Inventory	264,509.00	0.015	3,967.64	3,528.00	88.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	12,104.10	2.0	24,208.20	22,286.00	92.1
TOTAL FORMULA AREAS			171,998.47	156,493.00	91.0

Table 10

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

OTTAWA

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	15,059.19	1.2	18,071.03	14,867.00	82.3
CLASS LABS					
Lab Contact Hours W	2,159.76	0.8	1,727.81	2,651.41	
Lab Contact Hours X	18,699.27	0.6	11,219.56	9,263.54	
Lab Contact Hours Y	3,169.09	0.5	1,584.55	3,706.82	
Lab Contact Hours Z	7,655.21	0.3	2,296.56	1,014.89	
Total Class Lab			16,828.48	16,772.90	99.7
RESEARCH					
Research Disciplines A	234.30	45.0	10,543.50	12,187.61	
Research Disciplines B	152.30	30.0	4,569.00	3,513.90	
Research Disciplines C	170.90	20.0	3,418.00	2,105.40	
Research Disciplines D	69.10	10.0	691.00	387.68	
Research Disciplines E	1,245.00	1.0	1,245.00	92.95	
Total Research			20,466.50	18,287.40	89.4
OFFICE - ACADEMIC					
Total FTE Faculty	943.10	13.0	12,260.30		
Faculty Supplement	141.47	13.0	1,839.05		
Total FTE Grads	1,834.08	4.0	7,336.33		
Office Service	21,435.68	0.3	6,430.70		
Total Academic Office				31,852.80	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,107.89	13.0	14,402.57		
Office Service	14,402.57	0.3	4,320.77		
Total Admin. Office				14,100.90	
Total Office			46,589.72	45,753.50	98.2
LIBRARY					
10% of Total Eq. Volumes	226,526.50	0.004	906.11		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,438,738.50	0.005	7,193.69		
Total Stack	2,265,265.00		11,999.80	9,609.90	80.1
FTE UG - Excl. Prof.	11,355.11	0.5	5,677.55		
FTE UG - Professional	1,870.00	1.0	1,870.00		
FTE Grads	1,834.08	0.7	1,283.86		
Total Study	15,059.19		8,831.41	3,635.30	41.2
Stack & Study	20,831.21	0.25	5,207.80	3,919.00	75.3
Total Library			26,039.01	17,164.20	65.9
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	15,059.19	0.9	13,553.27		
Total P.E./Athletics			13,553.27	8,499.40	62.7
MAINTENANCE SHOPS					
Total NASM Inventory	172,261.00	0.015	2,583.92	1,458.70	56.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	15,059.19	2.0	30,118.38	21,115.00	70.1
TOTAL FORMULA AREAS			174,250.30	143,916.10	82.6

Table 11

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

QUEEN'S

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	12,729.00	1.2	15,274.80	16,201.70	106.1
CLASS LABS					
Lab Contact Hours W	5,015.00	0.8	4,012.00	7,853.20	
Lab Contact Hours X	29,419.00	0.6	17,651.40	18,311.80	
Lab Contact Hours Y	8,986.00	0.5	4,493.00	4,550.00	
Lab Contact Hours Z	3,302.00	0.3	990.60	1,378.40	
Total Class Lab			27,147.00	32,445.40	119.5
RESEARCH					
Research Disciplines A	411.80	45.0	18,531.00	13,771.90	
Research Disciplines B	210.15	30.0	6,304.50	5,064.40	
Research Disciplines C	98.20	20.0	1,964.00	1,961.80	
Research Disciplines D	147.50	10.0	1,475.00	1,459.80	
Research Disciplines E	872.15	1.0	872.15	871.40	
Total Research			29,146.65	23,098.10	79.2
OFFICE - ACADEMIC					
Total FTE Faculty	801.00	13.0	10,413.00		
Faculty Supplement	120.15	13.0	1,561.95		
Total FTE Grads	1,787.00	4.0	7,148.00		
Office Service	19,122.95	0.3	5,736.89		
Total Academic Office				29,703.60	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	713.00	13.0	9,269.00		
Office Service	9,269.00	0.3	2,780.70		
Total Admin. Office				11,449.10	
Total Office			36,909.54	41,152.70	111.5
LIBRARY					
10% of Total Eq. Volumes	198,100.00	0.004	792.40		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,182,900.00	0.005	5,914.50		
Total Stack	1,981,000.00		10,606.90	10,207.80	96.2
FTE UG - Excl. Prof.	9,613.00	0.5	4,806.50		
FTE UG - Professional	1,329.00	1.0	1,329.00		
FTE Grads	1,787.00	0.7	1,250.90		
Total Study	12,729.00		7,386.40	7,277.40	98.5
Stack & Study	17,993.30	0.25	4,498.33	4,214.30	93.7
Total Library			22,491.63	21,699.50	96.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	12,729.00	0.9	11,456.10		
Total P.E./Athletics			11,456.10	12,888.10	112.5
MAINTENANCE SHOPS					
Total NASM Inventory	264,530.50	0.015	3,967.96	2,762.40	69.6
STUDENT AND CENTRAL SERVICES					
Total FTE Students	12,729.00	2.0	25,458.00	24,028.50	94.4
TOTAL FORMULA AREAS			171,851.67	174,276.40	101.4

Table 12

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

RYERSON

		INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS						
Total FTE Students		11,019.10	1.2	13,222.92	11,622.40	87.9
CLASS LABS						
Lab Contact Hours	W	9,301.77	0.8	7,441.42	5,080.45	
Lab Contact Hours	X	38,533.51	0.6	23,120.11	19,655.85	
Lab Contact Hours	Y	12,498.22	0.5	6,249.11	1,972.20	
Lab Contact Hours	Z	19,164.00	0.3	5,749.20	2,757.00	
Total Class Lab				42,559.84	30,867.40	72.5
RESEARCH						
Research Disciplines	A	0.00	45.0	0.00	0.00	
Research Disciplines	B	0.00	30.0	0.00	0.00	
Research Disciplines	C	0.00	20.0	0.00	0.00	
Research Disciplines	D	0.00	10.0	0.00	0.00	
Research Disciplines	E	0.00	1.0	0.00	0.00	
Total Research				0.00	0.00	
OFFICE - ACADEMIC						
Total FTE Faculty		640.50	13.0	8,326.50		
Faculty Supplement		96.08	13.0	1,248.98		
Total FTE Grads		0.00	4.0	0.00		
Office Service		9,575.48	0.3	2,872.64		
Total Academic Office					10,157.80	
OFFICE - ADMINISTRATIVE						
Total FTE Non-Acd Staff		597.00	13.0	7,761.00		
Office Service		7,761.00	0.3	2,328.30		
Total Admin. Office					7,180.20	
Total Office				22,537.42	17,338.00	76.9
LIBRARY						
10% of Total Eq. Volumes		45,383.93	0.004	181.54		
Next 300,000		300,000.00	0.007	2,100.00		
Next 300,000		108,455.37	0.006	650.73		
Remainder		(0.00)	0.005	(0.00)		
Total Stack		453,839.30		2,932.27	7,038.30	240.0
FTE UG - Excl. Prof.		11,019.10	0.5	5,509.55		
FTE UG - Professional		0.00	1.0	0.00		
FTE Grads		0.00	0.7	0.00		
Total Study		11,019.10		5,509.55	0.00	0.0
Stack & Study		8,441.82	0.25	2,110.45	1,969.80	93.3
Total Library				10,552.27	9,008.10	85.4
PHYSICAL EDUCATION/ATHLETICS						
Under 4,000 FTE Enrol.		0.00				
4,000-8,000 Enrol.		0.00				
Total FTE Students		11,019.10	0.9	9,917.19		
Total P.E./Athletics				9,917.19	3,505.80	35.4
MAINTENANCE SHOPS						
Total NASM Inventory		96,574.50	0.015	1,448.62	2,229.40	153.9
STUDENT AND CENTRAL SERVICES						
Total FTE Students		11,019.10	2.0	22,038.20	16,399.30	74.4
TOTAL FORMULA AREAS				122,276.46	90,970.40	74.4

Table 13

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

TORONTO (ST. GEORGE)*

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	25,570.79	1.2	30,684.95	31,735.61	103.4
CLASS LABS					
Lab Contact Hours W	8,275.00	0.8	6,620.00	6,659.41	
Lab Contact Hours X	57,218.00	0.6	34,330.80	38,434.07	
Lab Contact Hours Y	1,090.00	0.5	545.00	2,219.64	
Lab Contact Hours Z	4,869.00	0.3	1,460.70	1,430.01	
Total Class Lab			42,956.50	48,743.13	113.5
RESEARCH					
Research Disciplines A	1,065.97	45.0	47,968.65	44,707.84	
Research Disciplines B	646.32	30.0	19,389.45	19,501.22	
Research Disciplines C	86.13	20.0	1,722.60	1,726.49	
Research Disciplines D	337.61	10.0	3,376.10	2,811.76	
Research Disciplines E	2,166.89	1.0	2,166.89	515.55	
Total Research			74,623.69	69,258.02	92.8
OFFICE - ACADEMIC					
Total FTE Faculty	1,824.19	13.0	23,714.47		
Faculty Supplement	273.63	13.0	3,557.17		
Total FTE Grads	4,843.06	4.0	19,372.24		
Office Service	46,643.88	0.3	13,993.16		
Total Academic Office				68,811.11	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	2,322.91	13.0	30,197.83		
Office Service	30,197.83	0.3	9,059.35		
Total Admin. Office				27,263.19	
Total Office			99,894.22	96,074.30	96.2
LIBRARY					
10% of Total Eq. Volumes	674,997.40	0.004	2,699.99		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	5,474,976.60	0.005	27,374.88		
Total Stack	6,749,974.00		33,974.87	26,781.08	78.8
FTE UG - Excl. Prof.	18,033.23	0.5	9,016.62		
FTE UG - Professional	2,694.50	1.0	2,694.50		
FTE Grads	4,843.06	0.7	3,390.14		
Total Study	25,570.79		15,101.26	17,668.48	117.0
Stack & Study	49,076.13	0.25	12,269.03	15,704.76	128.0
Total Library			61,345.16	60,154.32	98.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	25,570.79	0.9	23,013.71		
Total P.E./Athletics			23,013.71	27,181.43	118.1
MAINTENANCE SHOPS					
Total NASM Inventory	446,548.87	0.015	6,698.23	5,486.95	81.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	25,570.79	2.0	51,141.58	39,343.45	76.9
TOTAL FORMULA AREAS			390,358.04	377,977.21	96.8

* Unconfirmed data. Data from official submission in Table A5.

Table 14

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

TORONTO (ERINDALE)

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	3,616.24	1.2	4,339.49	4,825.24	111.2
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	3,831.00	0.6	2,298.60	4,465.04	
Lab Contact Hours Y	846.00	0.5	423.00	869.62	
Lab Contact Hours Z	935.00	0.3	280.50	428.95	
Total Class Lab			3,002.10	5,763.61	192.0
RESEARCH					
Research Disciplines A	72.50	45.0	3,262.28	3,815.14	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	17.51	20.0	350.20	922.70	
Research Disciplines D	26.23	10.0	262.25	411.50	
Research Disciplines E	111.10	1.0	111.10	417.46	
Total Research			3,985.83	5,566.80	139.7
OFFICE - ACADEMIC					
Total FTE Faculty	191.49	13.0	2,489.37		
Faculty Supplement	28.72	13.0	373.41		
Total FTE Grads	64.44	4.0	257.76		
Office Service	3,120.54	0.3	936.16		
Total Academic Office				4,713.58	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	108.72	13.0	1,413.36		
Office Service	1,413.36	0.3	424.01		
Total Admin. Office				1,970.00	
Total Office			5,894.06	6,683.58	113.4
LIBRARY					
10% of Total Eq. Volumes	38,857.50	0.004	155.43		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	49,717.50	0.006	298.31		
Remainder	0.00	0.005	0.00		
Total Stack	388,575.00		2,553.74	1,999.43	78.3
FTE UG - Excl. Prof.	3,551.80	0.5	1,775.90		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	64.44	0.7	45.11		
Total Study	3,616.24		1,821.01	1,148.17	63.1
Stack & Study	4,374.74	0.25	1,093.69	578.62	52.9
Total Library			5,468.43	3,726.22	68.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	3,616.24				
4,000-8,000 Enrol.	0.00				
Total FTE Students	3,616.24	0.9	3,254.62		
Total P.E./Athletics			5,254.62	2,395.76	45.6
MAINTENANCE SHOPS					
Total NASM Inventory	50,462.95	0.015	756.94	604.62	79.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	3,616.24	2.0	7,232.48	7,606.24	105.2
TOTAL FORMULA AREAS			35,933.95	37,172.07	103.4

Table 15

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

TORONTO (SCARBOROUGH)

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	3,574.20	1.2	4,289.04	3,123.21	72.8
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	5,309.00	0.6	3,185.40	4,659.24	
Lab Contact Hours Y	929.00	0.5	464.50	816.88	
Lab Contact Hours Z	618.00	0.3	185.40	447.08	
Total Class Lab			3,835.30	5,923.18	154.4
RESEARCH					
Research Disciplines A	58.60	45.0	2,637.00	2,482.82	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	20.16	20.0	403.20	700.00	
Research Disciplines D	28.50	10.0	285.00	740.31	
Research Disciplines E	107.59	1.0	107.59	86.31	
Total Research			3,432.79	4,009.44	116.8
OFFICE - ACADEMIC					
Total FTE Faculty	190.90	13.0	2,481.70		
Faculty Supplement	28.64	13.0	372.26		
Total FTE Grads	47.90	4.0	191.60		
Office Service	3,045.56	0.3	913.67		
Total Academic Office				3,333.64	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	88.47	13.0	1,150.11		
Office Service	1,150.11	0.3	345.03		
Total Admin. Office				1,930.84	
Total Office			5,454.36	5,264.48	96.5
LIBRARY					
10% of Total Eq. Volumes	34,434.10	0.004	137.74		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	9,906.90	0.006	59.44		
Remainder	0.00	0.005	0.00		
Total Stack	344,341.00		2,297.18	1,327.87	57.8
FTE UG - Excl. Prof.	3,526.30	0.5	1,763.15		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	47.90	0.7	33.53		
Total Study	3,574.20		1,796.68	956.20	53.2
Stack & Study	4,093.86	0.25	1,023.46	612.42	59.8
Total Library			5,117.32	2,896.49	56.6
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	3,574.20				
4,000-8,000 Enrol.	0.00				
Total FTE Students	3,574.20	0.9	3,216.78		
Total P.E./Athletics			5,216.78	3,934.58	75.8
MAINTENANCE SHOPS					
Total NASM Inventory	41,920.43	0.015	628.81	1,055.24	167.8
STUDENT AND CENTRAL SERVICES					
Total FTE Students	3,574.20	2.0	7,148.40	5,422.98	75.9
TOTAL FORMULA AREAS			35,122.80	31,649.60	90.1

Table 16

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

TRENT

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	3,583.60	1.2	4,300.32	2,458.00	57.2
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	2,474.50	0.6	1,484.70	2,315.00	
Lab Contact Hours Y	3,040.00	0.5	1,520.00	1,051.00	
Lab Contact Hours Z	1,085.00	0.3	325.50	164.00	
Total Class Lab			3,330.20	3,530.00	106.0
RESEARCH					
Research Disciplines A	29.40	45.0	1,323.00	1,938.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	16.20	20.0	324.00	509.00	
Research Disciplines D	58.70	10.0	587.00	184.00	
Research Disciplines E	136.80	1.0	136.80	0.00	
Total Research			2,370.80	2,631.00	111.0
OFFICE - ACADEMIC					
Total FTE Faculty	214.00	13.0	2,782.00		
Faculty Supplement	32.10	13.0	417.30		
Total FTE Grads	54.20	4.0	216.80		
Office Service	3,416.10	0.3	1,024.83		
Total Academic Office				3,842.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	167.00	13.0	2,171.00		
Office Service	2,171.00	0.3	651.30		
Total Admin. Office				2,577.00	
Total Office			7,263.23	6,419.00	88.4
LIBRARY					
10% of Total Eq. Volumes	53,973.10	0.004	215.89		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	185,757.90	0.006	1,114.55		
Remainder	0.00	0.005	0.00		
Total Stack	539,731.00		3,430.44	2,339.00	68.2
FTE UG - Excl. Prof.	3,529.40	0.5	1,764.70		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	54.20	0.7	37.94		
Total Study	3,583.60		1,802.64	1,968.00	109.2
Stack & Study	5,233.08	0.25	1,308.27	1,055.00	80.6
Total Library			6,541.35	5,362.00	82.0
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	3,583.60				
4,000-8,000 Enrol.	0.00				
Total FTE Students	3,583.60	0.9	3,225.24		
Total P.E./Athletics			5,225.24	3,413.00	65.3
MAINTENANCE SHOPS					
Total NASM Inventory	48,648.00	0.015	729.72	341.00	46.7
STUDENT AND CENTRAL SERVICES					
Total FTE Students	3,583.60	2.0	7,167.20	6,440.00	89.9
TOTAL FORMULA AREAS			36,928.08	30,594.00	82.8

Table 17

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

WATERLOO

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	13,190.20	1.2	15,828.24	14,301.00	90.4
CLASS LABS					
Lab Contact Hours W	8,283.00	0.8	6,626.40	4,319.00	
Lab Contact Hours X	28,664.00	0.6	15,998.40	14,124.00	
Lab Contact Hours Y	5,029.00	0.5	2,514.50	2,703.00	
Lab Contact Hours Z	6,113.00	0.3	1,833.90	1,794.00	
Total Class Lab			26,973.20	22,940.00	85.0
RESEARCH					
Research Disciplines A	274.45	45.0	12,350.25	11,107.00	
Research Disciplines B	432.90	30.0	12,987.00	11,438.00	
Research Disciplines C	159.75	20.0	3,195.00	4,127.00	
Research Disciplines D	272.25	10.0	2,722.50	970.00	
Research Disciplines E	487.70	1.0	487.70	693.00	
Total Research			31,742.45	28,332.00	89.3
OFFICE - ACADEMIC					
Total FTE Faculty	816.30	13.0	10,611.90		
Faculty Supplement	122.45	13.0	1,591.79		
Total FTE Grads	1,474.50	4.0	5,898.00		
Office Service	18,101.69	0.3	5,430.51		
Total Academic Office				27,295.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	968.50	13.0	12,590.50		
Office Service	12,590.50	0.3	3,777.15		
Total Admin. Office				11,469.00	
Total Office			39,899.84	38,764.00	97.2
LIBRARY					
10% of Total Eq. Volumes	144,872.60	0.004	579.49		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	703,853.40	0.005	3,519.27		
Total Stack	1,448,726.00		7,998.76	5,872.00	73.4
FTE UG - Excl. Prof.	11,480.70	0.5	5,740.35		
FTE UG - Professional	235.00	1.0	235.00		
FTE Grads	1,474.50	0.7	1,032.15		
Total Study	13,190.20		7,007.50	4,692.00	67.0
Stack & Study	15,006.26	0.25	3,751.56	2,993.00	79.8
Total Library			18,757.82	13,557.00	72.3
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	13,190.20	0.9	11,871.18		
Total P.E./Athletics			11,871.18	8,910.00	75.1
MAINTENANCE SHOPS					
Total NASM Inventory	235,106.00	0.015	3,526.59	5,215.00	147.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	13,190.20	2.0	26,380.40	25,799.00	97.8
TOTAL FORMULA AREAS			174,979.72	157,818.00	90.2

Table 18

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

WESTERN

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	18,903.60	1.2	22,684.32	20,328.00	89.6
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	37,862.50	0.6	22,717.50	20,086.00	
Lab Contact Hours Y	7,786.00	0.5	3,893.00	6,558.00	
Lab Contact Hours Z	6,794.00	0.3	2,038.20	2,837.00	
Total Class Lab			28,648.70	29,481.00	102.9
RESEARCH					
Research Disciplines A	423.75	45.0	19,068.75	16,894.00	
Research Disciplines B	155.50	30.0	4,665.00	6,256.00	
Research Disciplines C	182.90	20.0	3,258.00	2,987.00	
Research Disciplines D	258.35	10.0	2,583.50	1,998.00	
Research Disciplines E	1,141.05	1.0	1,141.05	1,430.00	
Total Research			30,716.30	29,565.00	96.3
OFFICE - ACADEMIC					
Total FTE Faculty	1,115.10	13.0	14,496.30		
Faculty Supplement	167.27	13.0	2,174.45		
Total FTE Grads	2,047.80	4.0	8,191.20		
Office Service	24,861.95	0.3	7,458.58		
Total Academic Office				36,941.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	1,174.00	13.0	15,262.00		
Office Service	15,262.00	0.3	4,578.60		
Total Admin. Office				17,003.00	
Total Office			52,161.13	53,944.00	103.4
LIBRARY					
10% of Total Eq. Volumes	200,467.10	0.004	801.87		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	1,204,203.90	0.005	6,021.02		
Total Stack	2,004,671.00		10,722.89	12,644.00	117.9
FTE UG - Excl. Prof.	15,010.40	0.5	7,505.20		
FTE UG - Professional	1,845.40	1.0	1,845.40		
FTE Grads	2,047.80	0.7	1,433.46		
Total Study	18,903.60		10,784.06	7,892.00	73.2
Stack & Study	21,506.95	0.25	5,376.74	5,299.00	98.6
Total Library			26,883.68	25,835.00	96.1
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	18,903.60	0.9	17,013.24		
Total P.E./Athletics			17,013.24	13,945.00	82.0
MAINTENANCE SHOPS					
Total NASM Inventory	278,905.00	0.015	4,183.58	5,329.00	127.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	18,903.60	2.0	37,807.20	31,050.00	82.1
TOTAL FORMULA AREAS			220,098.15	209,477.00	95.2

Table 19

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

WILFRID LAURIER

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	5,198.70	1.2	6,238.44	5,224.00	83.7
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	4,419.00	0.6	2,651.40	1,711.00	
Lab Contact Hours Y	1,421.00	0.5	710.50	510.00	
Lab Contact Hours Z	1,436.00	0.3	430.80	125.00	
Total Class Lab			3,792.70	2,308.00	66.1
RESEARCH					
Research Disciplines A	23.00	45.0	1,035.00	280.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	35.20	20.0	704.00	280.00	
Research Disciplines D	43.75	10.0	437.50	111.00	
Research Disciplines E	371.95	1.0	371.95	447.00	
Total Research			2,548.45	1,103.00	43.3
OFFICE - ACADEMIC					
Total FTE Faculty	307.00	13.0	3,991.00		
Faculty Supplement	46.05	13.0	598.65		
Total FTE Grads	333.90	4.0	1,335.60		
Office Service	5,925.25	0.3	1,777.58		
Total Academic Office				4,551.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	366.00	13.0	4,758.00		
Office Service	4,758.00	0.3	1,427.40		
Total Admin. Office				3,721.00	
Total Office			13,888.23	8,272.00	59.6
LIBRARY					
10% of Total Eq. Volumes	64,815.50	0.004	259.26		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	283,339.50	0.006	1,700.04		
Remainder	0.00	0.005	0.00		
Total Stack	648,155.00		4,059.30	3,108.00	76.6
FTE UG - Excl. Prof.	4,864.80	0.5	2,432.40		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	333.90	0.7	233.73		
Total Study	5,198.70		2,666.13	1,822.00	68.3
Stack & Study	6,725.43	0.25	1,681.36	1,168.00	69.5
Total Library			8,406.79	6,098.00	72.5
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	5,198.70				
Total FTE Students	5,198.70	0.9	4,678.83		
Total P.E./Athletics			5,678.83	4,513.00	79.5
MAINTENANCE SHOPS					
Total NASM Inventory	50,418.00	0.015	756.27	1,002.00	132.5
STUDENT AND CENTRAL SERVICES					
Total FTE Students	5,198.70	2.0	10,397.40	8,285.00	79.7
TOTAL FORMULA AREAS			51,707.10	37,005.00	71.6

Table 20

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

WINDSOR

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	9,038.23	1.2	10,845.88	9,484.89	87.5
CLASS LABS					
Lab Contact Hours W	1,694.00	0.8	1,355.20	2,892.20	
Lab Contact Hours X	6,791.50	0.6	4,074.90	5,402.61	
Lab Contact Hours Y	3,009.00	0.5	1,504.50	2,809.35	
Lab Contact Hours Z	11,318.00	0.3	3,395.40	5,407.20	
Total Class Lab			10,330.00	17,156.27	166.1
RESEARCH					
Research Disciplines A	111.62	45.0	5,022.68	5,984.21	
Research Disciplines B	107.82	30.0	3,234.60	2,434.23	
Research Disciplines C	101.60	20.0	2,032.00	817.49	
Research Disciplines D	62.20	10.0	621.95	122.58	
Research Disciplines E	496.26	1.0	496.26	453.80	
Total Research			11,407.48	9,792.31	85.8
OFFICE - ACADEMIC					
Total FTE Faculty	548.16	13.0	7,126.08		
Faculty Supplement	82.22	13.0	1,068.91		
Total FTE Grads	650.00	4.0	2,600.00		
Office Service	10,794.99	0.3	3,238.50		
Total Academic Office				14,629.67	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	359.42	13.0	4,672.46		
Office Service	4,672.46	0.3	1,401.74		
Total Admin. Office				6,326.89	
Total Office			20,107.69	20,956.56	104.2
LIBRARY					
10% of Total Eq. Volumes	159,328.84	0.004	637.32		
Next 300,000	300,000.00	0.007	2,100.00		
Next 300,000	300,000.00	0.006	1,800.00		
Remainder	833,959.55	0.005	4,169.80		
Total Stack	1,593,288.39		8,707.11	6,795.92	78.1
FTE UG - Excl. Prof.	7,637.83	0.5	3,818.92		
FTE UG - Professional	750.40	1.0	750.40		
FTE Grads	650.00	0.7	455.00		
Total Study	9,038.23		5,024.32	5,327.35	106.0
Stack & Study	13,731.43	0.25	3,432.86	2,863.93	83.4
Total Library			17,164.29	14,987.20	87.3
PHYSICAL EDUCATION/ATELETICS					
Under 4,000 FTE Enrol.	0.00				
4,000-8,000 Enrol.	0.00				
Total FTE Students	9,038.23	0.9	8,134.41		
Total P.E./Athletics			8,134.41	10,600.38	130.3
MAINTENANCE SHOPS					
Total NASM Inventory	123,871.15	0.015	1,858.07	2,014.97	108.4
STUDENT AND CENTRAL SERVICES					
Total FTE Students	9,038.23	2.0	18,076.47	14,087.25	77.9
TOTAL FORMULA AREAS			97,924.28	99,079.83	101.2

Table 21

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

YORK (MAIN CAMPUS)

		INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS						
Total FTE Students		20,818.54	1.2	24,982.25	18,864.60	75.5
CLASS LABS						
Lab Contact Hours	W	0.00	0.8	0.00	0.00	
Lab Contact Hours	X	24,030.00	0.6	14,418.00	11,000.90	
Lab Contact Hours	Y	6,642.00	0.5	3,321.00	1,434.70	
Lab Contact Hours	Z	5,861.00	0.3	1,758.30	1,386.50	
Total Class Lab				19,497.30	13,822.30	70.9
RESEARCH						
Research Disciplines	A	237.05	45.0	10,667.25	6,909.70	
Research Disciplines	B	0.00	30.0	0.00	0.00	
Research Disciplines	C	181.86	20.0	3,637.20	1,822.00	
Research Disciplines	D	279.14	10.0	2,791.40	976.70	
Research Disciplines	E	1,669.70	1.0	1,669.70	884.30	
Total Research				18,765.55	12,006.00	64.0
OFFICE - ACADEMIC						
Total FTE Faculty		1,242.90	13.0	16,157.70		
Faculty Supplement		186.44	13.0	2,423.66		
Total FTE Grads		2,061.70	4.0	8,246.80		
Office Service		26,828.16	0.3	8,048.45		
Total Academic Office					29,368.70	
OFFICE - ADMINISTRATIVE						
Total FTE Non-Acd Staff		1,381.00	13.0	17,953.00		
Office Service		17,953.00	0.3	5,385.90		
Total Admin. Office					16,945.80	
Total Office				58,215.50	46,314.30	79.6
LIBRARY						
10% of Total Eq. Volumes		172,767.10	0.004	691.07		
Next 300,000		300,000.00	0.007	2,100.00		
Next 300,000		300,000.00	0.006	1,800.00		
Remainder		954,903.90	0.005	4,774.52		
Total Stack		1,727,671.00		9,365.59	8,000.00	85.4
FTE UG - Excl. Prof.		16,528.94	0.5	8,264.47		
FTE UG - Professional		2,227.90	1.0	2,227.90		
FTE Grads		2,061.70	0.7	1,443.19		
Total Study		20,818.54		11,935.56	5,907.40	49.5
Stack & Study		21,301.15	0.25	5,325.29	8,886.80	166.9
Total Library				26,626.43	22,794.20	85.6
PHYSICAL EDUCATION/ATHLETICS						
Under 4,000 FTE Enrol.		0.00				
4,000-8,000 Enrol.		0.00				
Total FTE Students		20,818.54	0.9	18,736.69		
Total P.E./Athletics				18,736.69	7,173.10	38.3
MAINTENANCE SHOPS						
Total NASM Inventory		215,919.30	0.015	3,238.79	1,608.50	49.7
STUDENT AND CENTRAL SERVICES						
Total FTE Students		20,818.54	2.0	41,637.08	25,921.50	62.3
TOTAL FORMULA AREAS				211,699.59	148,504.50	70.1

Table 22

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

YORK (GLENDON COLLEGE)

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	1,842.72	1.2	2,211.26	1,738.70	78.6
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	386.00	0.6	231.60	0.00	
Lab Contact Hours Y	160.00	0.5	80.00	92.80	
Lab Contact Hours Z	936.00	0.3	280.80	844.40	
Total Class Lab			592.40	937.10	158.2
RESEARCH					
Research Disciplines A	4.00	45.0	180.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	8.71	20.0	174.20	107.10	
Research Disciplines D	3.07	10.0	30.70	0.00	
Research Disciplines E	121.93	1.0	121.93	184.40	
Total Research			506.83	291.60	57.5
OFFICE - ACADEMIC					
Total FTE Faculty	137.21	13.0	1,783.73		
Faculty Supplement	20.58	13.0	267.56		
Total FTE Grads	0.00	4.0	0.00		
Office Service	2,051.29	0.3	615.39		
Total Academic Office				2,432.40	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	37.00	13.0	481.00		
Office Service	481.00	0.3	144.30		
Total Admin. Office				1,052.80	
Total Office			3,291.98	3,485.20	105.9
LIBRARY					
10% of Total Eq. Volumes	25,530.00	0.004	102.12		
Next 300,000	229,770.00	0.007	1,608.39		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	255,300.00		1,710.51	836.10	48.9
FTE UG - Excl. Prof.	1,754.92	0.5	877.46		
FTE UG - Professional	87.80	1.0	87.80		
FTE Grads	0.00	0.7	0.00		
Total Study	1,842.72		965.26	982.20	101.8
Stack & Study	2,675.77	0.25	668.94	342.70	51.2
Total Library			3,344.71	2,161.00	64.6
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	1,842.72				
4,000-8,000 Enrol.	0.00				
Total FTE Students	1,842.72	0.9	1,658.45		
Total P.E./Athletics			3,658.45	3,122.00	85.3
MAINTENANCE SHOPS					
Total NASM Inventory	22,333.40	0.015	335.00	289.00	86.3
STUDENT AND CENTRAL SERVICES					
Total FTE Students	1,842.72	2.0	3,685.44	2,873.10	78.0
TOTAL FORMULA AREAS			17,626.07	14,897.70	84.5

Table 23

GENERATED CLASSROOM SPACE PER FTE STUDENT, 1986-87

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	5,516.2	1.2	6,619	4,316	65.2
Carleton	12,659.1	1.2	15,191	12,162	80.1
Guelph	10,578.1	1.2	12,694	11,803	93.0
Lakehead	3,873.9	1.2	4,649	4,350	93.6
Laurentian	3,962.3	1.2	4,755	5,662	119.1
McMaster	12,104.1	1.2	14,525	13,904	95.7
Ottawa	15,059.2	1.2	18,071	14,867	82.3
Queen's	12,729.0	1.2	15,275	16,202	106.1
Ryerson	11,019.1	1.2	13,223	11,622	87.9
Toronto - St. George	25,570.8	1.2	30,685	31,738	103.4
Toronto - Erindale	3,616.2	1.2	4,339	4,825	111.2
Toronto - Scarborough	3,574.2	1.2	4,289	3,123	72.8
Trent	3,583.6	1.2	4,300	2,458	57.2
Waterloo	13,190.2	1.2	15,828	14,301	90.4
Western	18,903.6	1.2	22,684	20,328	89.6
Wilfrid Laurier	5,198.7	1.2	6,238	5,224	83.7
Windsor	9,038.2	1.2	10,846	9,485	87.5
York - Main Campus	20,818.5	1.2	24,982	18,865	75.5
York - Glendon	1,842.7	1.2	2,211	1,739	78.6
Total	192,837.8	1.2	231,405	206,972	89.4

Input Measure: Total FTE Students, as defined in 1.0 of Appendix C.

Space Factor: 1.2 square metres per FTE Student.

Table 24

GENERATED CLASS LAB SPACE PER WEIGHTED AVERAGE LAB CONTACT HOUR, 1986-87

	INPUT MEASURE	SPACE/ INPUT	SPACE GENERATED	INVENTORY	% I/G
Brock	14,363.0	0.5	7,320	5,879	80.3
Carleton	27,936.0	0.6	16,995	16,612	97.7
Guelph	60,939.3	0.6	38,442	25,554	66.5
Lakehead	12,935.5	0.6	7,327	11,043	150.7
Laurentian	12,837.0	0.5	6,720	5,379	80.0
McMaster	31,479.0	0.6	17,460	15,689	89.9
Ottawa	31,683.3	0.5	16,828	16,773	99.7
Queen's	46,722.0	0.6	27,147	32,445	119.5
Ryerson	79,497.5	0.5	42,560	30,867	72.5
Toronto - St. George	71,452.0	0.6	42,957	48,743	113.5
Toronto - Erindale	5,612.0	0.5	3,002	5,764	192.0
Toronto - Scarborough	6,856.0	0.6	3,835	5,923	154.4
Trent	6,599.5	0.5	3,330	3,530	106.0
Waterloo	46,089.0	0.6	26,973	22,940	85.0
Western	52,442.5	0.5	28,649	29,481	102.9
Wilfrid Laurier	7,276.0	0.5	3,793	2,508	66.1
Windsor	22,812.5	0.5	10,330	17,156	166.1
York - Main Campus	36,533.0	0.5	19,497	13,822	70.9
York - Glendon	1,482.0	0.4	592	937	158.2
Total	575,547.1	0.6	323,758	311,046	96.1

Input Measure: Total laboratory weekly student contact hours for programmes in Groups W, X, Y, Z as defined in Figure 2, "Programme Classification Scheme" in Part I of this report.

Space Per Input: A weighted average of class lab factors for Groups W, X, Y, Z (Total Class Lab Space Generated divided by Total Contact hours).

Table 25

GENERATED CLASS LAB SPACE PER FTE STUDENT, 1986-87

	INPUT MEASURE	SPACE/ STUDENT	SPACE GENERATED	INVENTORY	% I/G
Brock	5,516.2	1.3	7,320	5,879	80.3
Carleton	12,658.1	1.3	16,995	16,612	97.7
Guelph	10,578.1	3.6	38,442	25,554	66.5
Lakehead	3,873.9	1.9	7,327	11,043	150.7
Laurentian	3,962.3	1.7	6,720	5,379	80.0
McMaster	12,104.1	1.4	17,460	15,689	89.9
Ottawa	15,059.2	1.1	16,828	16,773	99.7
Queen's	12,729.0	2.1	27,147	32,445	119.5
Ryerson	11,019.1	3.9	42,560	30,867	72.5
Toronto - St. George	25,570.8	1.7	42,937	48,743	113.5
Toronto - Erindale	3,616.2	0.8	3,002	5,764	192.0
Toronto - Scarborough	3,574.2	1.1	3,835	5,923	154.4
Trent	3,583.6	0.9	3,330	3,530	106.0
Waterloo	13,190.2	2.0	26,973	22,940	85.0
Western	18,903.6	1.5	28,649	29,481	102.9
Wilfrid Laurier	5,198.7	0.7	3,793	2,508	66.1
Windsor	9,038.2	1.1	10,330	17,156	166.1
York - Main Campus	20,818.5	0.9	19,497	13,822	70.9
York - Glendon	1,842.7	0.3	592	937	158.2
Total	192,837.8	1.7	323,758	311,046	96.1

Input Measure: Total FTE Students.

Space Per Student: Total Generated Class Lab Space divided by Total FTE Students.

Table 26

GENERATED RESEARCH SPACE PER WEIGHTED AVERAGE FTE FACULTY, .50 FTE GRADUATE STUDENTS AND .50 OTHER RESEARCH APPOINTMENTS, 1986-87

	INPUT MEASURE	SPACE/ INPUT	SPACE GENERATED	INVENTORY	% I/G
Brock	456.2	8.8	4,032	4,179	103.6
Carleton	1,391.1	10.7	14,892	8,648	58.1
Guelph	1,392.8	26.0	36,180	43,749	120.9
Lakehead	332.9	15.9	5,283	2,911	55.1
Laurentian	340.3	13.1	4,461	1,807	40.5
McMaster	1,834.6	17.8	32,675	34,820	106.6
Ottawa	1,891.6	10.8	20,467	18,287	89.4
Queen's	1,740.8	16.7	29,147	23,098	79.2
Ryerson*	640.5	-	-	-	-
Toronto - St. George	4,305.0	17.3	74,624	69,258	92.8
Toronto - Erindale	227.3	17.5	3,986	5,567	139.7
Toronto - Scarborough	214.9	16.0	3,433	4,009	116.8
Trent	241.1	9.8	2,371	2,631	111.0
Waterloo	1,627.1	19.5	31,742	28,332	89.3
Western	2,158.5	14.2	30,716	29,565	96.3
Wilfrid Laurier	474.0	5.4	2,548	1,103	43.3
Windsor	880.2	13.0	11,407	9,792	85.8
York - Main Campus	2,294.8	8.2	18,766	12,006	64.0
York - Glendon	137.7	3.7	507	292	57.5
Total	22,581.2	14.5	327,236	300,052	91.7

* Category not applicable.

Input Measure: The total of FTE Faculty plus one-half Graduate Student plus one-half Other Research Appointments in programmes A, B, C, D, E (Figure 2, "Programme Classification Scheme").

Space Per Input: A weighted average of space factors for programmes A, B, C, D, E (Total Research Space Generated divided by Total Faculty and one-half Graduate Student and one-half Other Research Appointments).

Table 27

TOTAL GENERATED ACADEMIC OFFICE SPACE PER FTE FACULTY, 1986-87

	INPUT MEASURE	SPACE/ FACULTY	SPACE GENERATED	INVENTORY*	% I/G
Brock	333.5	23.2	7,722	5,576	72.2
Carleton	644.7	31.1	20,040	18,616	92.9
Guelph	851.1	25.9	22,008	16,233	73.8
Lakehead	245.7	23.1	5,666	4,042	71.3
Laurentian	266.0	22.3	5,937	5,138	86.5
McMaster	1,023.0	26.7	27,304	22,015	80.6
Ottawa	943.1	29.5	27,866	26,725	95.9
Queen's	801.0	31.0	24,860	24,603	99.0
Ryerson	640.5	19.4	12,448	9,322	74.9
Toronto - St. George	1,824.2	33.2	60,637	57,847	95.1
Toronto - Erindale	191.5	21.2	4,057	4,278	105.4
Toronto - Scarborough	190.9	20.7	3,959	3,259	82.3
Trent	214.0	20.8	4,441	3,426	77.1
Waterloo	816.3	28.8	23,532	24,104	102.4
Western	1,115.1	29.0	32,321	30,862	95.5
Wilfrid Laurier	307.0	25.1	7,703	3,770	48.9
Windsor	548.2	25.6	14,033	12,884	91.8
York - Main Campus	1,242.9	28.1	34,877	23,771	68.2
York - Glendon	137.2	19.4	2,667	2,202	82.6
Total	12,335.9	27.7	342,078	298,472	87.3

Input Measure: Total FTE Faculty.

Space per Faculty: Total Generated Space for Faculty (plus 15%) and Graduate Students (including service space) divided by total FTE Faculty.

* Includes subcategories 4.1, 4.2, 4.3 and 4.5

Table 28

TOTAL GENERATED ADMINISTRATIVE OFFICE SPACE
PER NON-ACADEMIC STAFF, 1986-87

	INPUT MEASURE	SPACE/ STAFF	SPACE GENERATED	INVENTORY*	% I/G
Brock	273.0	16.9	4,614	3,129	67.8
Carleton	451.9	16.9	7,636	11,028	144.4
Guelph	1,269.8	16.9	21,460	21,873	101.9
Lakehead	337.0	16.9	5,695	3,021	53.0
Laurentian	239.0	16.9	4,039	2,661	65.9
McMaster	1,111.0	16.9	18,776	15,588	83.0
Ottawa	1,107.9	16.9	18,723	19,029	101.6
Queen's	713.0	16.9	12,050	16,550	137.3
Ryerson	597.0	16.9	10,089	8,018	79.5
Toronto - St. George	2,322.9	16.9	39,257	38,427	97.9
Toronto - Erindale	108.7	16.9	1,837	2,408	131.0
Toronto - Scarborough	88.5	16.9	1,495	2,005	134.1
Trent	167.0	16.9	2,822	2,993	106.0
Waterloo	968.5	16.9	16,368	14,660	89.6
Western	1,174.0	16.9	19,841	23,082	116.3
Wilfrid Laurier	366.0	16.9	6,185	4,502	72.8
Windsor	359.4	16.9	6,074	8,073	132.9
York - Main Campus	1,381.0	16.9	23,339	22,543	96.6
York - Glendon	37.0	16.9	625	1,283	205.2
Total	13,072.6	16.9	220,927	220,871	100.0

Input Measure: Total Non-Academic Office Staff.

Space per Staff: Total Generated Space for Non-Academic Office Staff (including service space) divided by Non-Academic Staff.

* Includes subcategories 4.4, 10.1 and 10.2

Table 29

GENERATED LIBRARY SPACE PER FTE STUDENT, 1986-87

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	5,516.2	1.5	8,119	4,440	54.7
Carleton	12,659.1	1.5	19,333	10,736	55.5
Guelph	10,578.1	2.2	23,102	12,265	53.1
Lakehead	3,873.9	1.7	6,763	5,166	76.4
Laurentian	3,962.3	2.4	9,559	6,231	65.2
McMaster	12,104.1	1.8	22,189	20,150	90.8
Ottawa	15,059.2	1.7	26,039	17,164	65.9
Queen's	12,729.0	1.8	22,492	21,700	96.5
Ryerson	11,019.1	1.0	10,552	9,008	85.4
Toronto - St. George	25,570.8	2.4	61,345	60,154	98.1
Toronto - Erindale	3,616.2	1.5	5,468	3,728	68.1
Toronto - Scarborough	3,574.2	1.4	5,117	2,896	56.6
Trent	3,583.6	1.8	6,541	5,362	82.0
Waterloo	13,190.2	1.4	18,758	13,557	72.3
Western	18,903.6	1.4	26,884	25,835	96.1
Wilfrid Laurier	5,198.7	1.6	8,407	6,098	72.5
Windsor	9,038.2	1.9	17,184	14,987	87.3
York - Main Campus	20,818.5	1.3	26,626	22,794	85.6
York - Glendon	1,842.7	1.8	3,345	2,161	64.6
Total	192,837.8	1.7	327,804	264,431	80.7

Input Measure: Total FTE Students.

Space Factor: Total Library Space Generated (stack space for total volumes, study space for FTE undergraduates, professional undergraduates and graduates, and service space for that number of volumes and students), divided by Total FTE Students.

Table 30

GENERATED PHYSICAL EDUCATION/ATHLETICS SPACE
PER FTE STUDENT, 1986-87

	INPUT MEASURE	SPACE/ STUDENT	SPACE GENERATED	INVENTORY	% I/G
Brock	5,516.2	1.1	5,965	7,075	118.6
Carleton	12,659.1	0.9	11,393	8,208	72.0
Guelph	10,578.1	0.9	9,520	7,829	82.2
Lakehead	3,873.9	1.4	5,487	5,477	99.8
Laurentian	3,982.3	1.4	5,586	6,318	113.5
McMaster	12,104.1	0.9	10,894	8,513	78.1
Ottawa	15,059.2	0.9	13,553	8,499	62.7
Queen's	12,729.0	0.9	11,456	12,888	112.5
Ryerson	11,019.1	0.9	9,917	3,508	35.4
Toronto - St. George	25,570.8	0.9	23,014	27,181	118.1
Toronto - Erindale	3,616.2	1.5	5,255	2,398	45.6
Toronto - Scarborough	3,574.2	1.5	5,217	3,955	75.8
Trent	3,583.6	1.5	5,225	3,413	65.3
Waterloo	13,190.2	0.9	11,871	8,910	75.1
Western	18,903.6	0.9	17,013	13,945	82.0
Wilfrid Laurier	5,198.7	1.1	5,679	4,513	79.5
Windsor	9,038.2	0.9	8,134	10,600	130.3
York - Main Campus	20,818.5	0.9	18,737	7,173	38.3
York - Glendon	1,842.7	2.0	3,658	3,122	85.3
Total	192,837.8	1.0	187,554	153,520	81.9

Input Measure: Total FTE Students.

Space Factor: Total Physical Education/Athletics Space Generated divided by Total FTE Students.

Table 31

MAINTENANCE SPACE, 1986-87

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	50,394.4	0.015	756	1,253	165.7
Carleton	127,133.6	0.015	1,907	1,771	92.9
Guelph	245,540.8	0.015	3,683	5,737	155.8
Lakehead	54,994.0	0.015	825	783	94.9
Laurentian	64,163.0	0.015	962	655	68.1
McMaster	264,509.0	0.015	3,968	3,528	88.9
Ottawa	172,261.0	0.015	2,584	1,457	56.4
Queen's	264,530.5	0.015	3,968	2,762	69.6
Ryerson	96,574.5	0.015	1,449	2,229	153.9
Toronto - St. George	446,548.9	0.015	6,698	5,487	81.9
Toronto - Erindale	50,463.0	0.015	757	605	79.9
Toronto - Scarborough	41,920.4	0.015	629	1,055	167.8
Trent	48,648.0	0.015	730	341	46.7
Waterloo	235,106.0	0.015	3,527	5,215	147.9
Western	278,905.0	0.015	4,184	5,329	127.4
Wilfrid Laurier	50,418.0	0.015	756	1,002	132.5
Windsor	123,871.2	0.015	1,858	2,015	108.4
York - Main Campus	215,919.3	0.015	3,239	1,609	49.7
York - Glendon	22,333.4	0.015	335	289	86.3
Total	2,854,233.9	0.015	42,814	43,122	100.7

Input Measure: Total NASM Inventory.

Space Factor: Based on the average ratio of Maintenance Space to Total Inventory at the Ontario Universities.

Table 32

STUDENT AND CENTRAL SERVICES SPACE GENERATED
PER FTE STUDENT, 1986-87

	INPUT MEASURE	SPACE FACTOR	SPACE GENERATED	INVENTORY	% I/G
Brock	5,516.2	2.0	11,032	7,505	68.0
Carleton	12,659.1	2.0	25,318	17,761	70.1
Guelph	10,578.1	2.0	21,156	22,188	104.8
Lakehead	3,873.9	2.0	7,748	8,191	105.7
Laurentian	3,962.3	2.0	7,925	6,914	87.2
McMaster	12,104.1	2.0	24,208	22,288	92.1
Ottawa	15,059.2	2.0	30,118	21,115	70.1
Queen's	12,729.0	2.0	25,458	24,029	94.4
Ryerson	11,019.1	2.0	22,038	16,399	74.4
Toronto - St. George	25,570.8	2.0	51,142	39,343	76.9
Toronto - Erindale	3,616.2	2.0	7,232	7,606	105.2
Toronto - Scarborough	3,574.2	2.0	7,148	5,423	75.9
Trent	3,583.6	2.0	7,167	6,440	89.9
Waterloo	13,190.2	2.0	26,380	25,799	97.8
Western	18,903.6	2.0	37,807	31,050	82.1
Wilfrid Laurier	5,198.7	2.0	10,397	8,285	79.7
Windsor	9,038.2	2.0	18,076	14,087	77.9
York - Main Campus	20,818.5	2.0	41,637	25,922	62.3
York - Glendon	1,842.7	2.0	3,685	2,873	78.0
Total	192,837.8	2.0	385,676	313,196	81.2

Input Measure: Total FTE Students.

Space Factor: A rounded total of recommended space factor ranges for the individual student and central services categories.

Table 33

TOTAL GENERATED SPACE PER FTE STUDENT, 1986-87

	FTE STUDENT	SPACE GENERATED	GENERATED PER FTE	INVENTORY	INVENTORY PER FTE	% I/G
Brock	5,516.2	56,178.4	10.2	43,353	7.9	77.2
Carleton	12,659.1	132,706.2	10.5	105,538	8.3	79.5
Guelph	10,578.1	188,245.4	17.8	167,211	15.8	88.8
Lakehead	3,873.9	49,442.0	12.8	44,984	11.6	91.0
Laurentian	3,982.3	49,925.5	12.6	40,765	10.3	81.7
McMaster	12,104.1	171,998.5	14.2	156,493	12.9	91.0
Ottawa	15,059.2	174,250.3	11.6	143,918	9.6	82.6
Queen's	12,729.0	171,851.7	13.5	174,278	13.7	101.4
Ryerson	11,019.1	122,276.5	11.1	90,870	8.3	74.4
Toronto - St. George	25,370.8	390,358.0	15.3	377,977	14.8	96.8
Toronto - Erindale	3,616.2	35,933.9	9.9	37,172	10.3	103.4
Toronto - Scarborough	3,574.2	35,122.8	9.8	31,650	8.9	90.1
Trent	3,583.6	36,928.1	10.3	30,594	8.5	82.8
Waterloo	13,190.2	174,979.7	13.3	157,818	12.0	90.2
Western	18,903.6	220,098.1	11.6	209,477	11.1	95.2
Wilfrid Laurier	5,198.7	51,707.1	9.9	37,005	7.1	71.6
Windsor	9,038.2	97,924.3	10.8	99,080	11.0	101.2
York - Main Campus	20,818.5	211,699.6	10.2	148,505	7.1	70.1
York - Glendon	1,842.7	17,626.1	9.6	14,898	8.1	84.5
Total	192,837.8	2,389,252.1	12.4	2,111,681	11.0	88.4

A comparison of the Total Generated Space and existing Inventory in categories 1 through 15 per FTE Student.

Table A1

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

ALGOMA*

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	386.60	1.2	463.92	788.00	169.9
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	0.00	0.6	0.00	0.00	
Lab Contact Hours Y	0.00	0.5	0.00	0.00	
Lab Contact Hours Z	0.00	0.3	0.00	0.00	
Total Class Lab			0.00	342.00	
RESEARCH					
Research Disciplines A	0.00	45.0	0.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	0.00	20.0	0.00	0.00	
Research Disciplines D	0.00	10.0	0.00	0.00	
Research Disciplines E	0.00	1.0	0.00	0.00	
Total Research			0.00	0.00	
OFFICE - ACADEMIC					
Total FTE Faculty	0.00	13.0	0.00		
Faculty Supplement	0.00	13.0	0.00		
Total FTE Grads	0.00	4.0	0.00		
Office Service	0.00	0.3	0.00		
Total Academic Office				426.00	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	0.00	13.0	0.00		
Office Service	0.00	0.3	0.00		
Total Admin. Office				262.00	
Total Office			0.00	688.00	
LIBRARY					
10% of Total Eq. Volumes	0.00	0.004	0.00		
Next 300,000	0.00	0.007	0.00		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	0.00		0.00	583.00	
FTE UG - Excl. Prof.	0.00	0.5	0.00		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	0.00		0.00	60.00	
Stack & Study	0.00	0.25	0.00	155.00	
Total Library			0.00	798.00	
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	386.60				
4,000-8,000 Enrol.	0.00				
Total FTE Students	386.60	0.9	347.94		
Total P.E./Athletics			2,347.94	195.00	8.3
MAINTENANCE SHOPS					
Total MASH Inventory	0.00	0.015	0.00	87.00	
STUDENT AND CENTRAL SERVICES					
Total FTE Students	386.60	2.0	773.20	672.00	86.9
TOTAL FORMULA AREAS			3,585.06	3,570.00	99.6

* Incomplete data.

Table A2

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

NIPISSING

		INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS						
Total FTE Students		789.80	1.2	947.76	349.00	36.8
CLASS LABS						
Lab Contact Hours	W	1.00	0.8	0.80	0.00	
Lab Contact Hours	X	49.00	0.6	29.40	0.00	
Lab Contact Hours	Y	144.00	0.5	72.00	0.00	
Lab Contact Hours	Z	8.00	0.3	2.40	0.00	
Total Class Lab				104.60	1,131.00	1081.3
RESEARCH						
Research Disciplines	A	5.00	45.0	225.00	0.00	
Research Disciplines	B	1.00	30.0	30.00	0.00	
Research Disciplines	C	4.00	20.0	80.00	0.00	
Research Disciplines	D	4.00	10.0	40.00	0.00	
Research Disciplines	E	19.00	1.0	19.00	0.00	
Total Research				394.00	0.00	0.0
OFFICE - ACADEMIC						
Total FTE Faculty		54.00	13.0	702.00		
Faculty Supplement		8.10	13.0	105.30		
Total FTE Grads		0.00	4.0	0.00		
Office Service		807.30	0.3	242.19		
Total Academic Office					725.00	
OFFICE - ADMINISTRATIVE						
Total FTE Non-Acd Staff		24.00	13.0	312.00		
Office Service		312.00	0.3	93.60		
Total Admin. Office					330.00	
Total Office				1,455.09	1,055.00	72.5
LIBRARY						
10% of Total Eq. Volumes		8,000.00	0.004	32.00		
Next 300,000		72,000.00	0.007	504.00		
Next 300,000		0.00	0.006	0.00		
Remainder		0.00	0.005	0.00		
Total Stack		80,000.00		536.00	0.00	0.0
FTE UG - Excl. Prof.		789.80	0.5	394.90		
FTE UG - Professional		0.00	1.0	0.00		
FTE Grads		0.00	0.7	0.00		
Total Study		789.80		394.90	0.00	0.0
Stack & Study		930.90	0.25	232.73	0.00	0.0
Total Library				1,163.63	0.00	0.0
PHYSICAL EDUCATION/ATHLETICS						
Under 4,000 FTE Enrol.		789.80				
4,000-8,000 Enrol.		0.00				
Total FTE Students		789.80	0.9	710.82		
Total P.E./Athletics				2,710.82	553.00	20.4
MAINTENANCE SHOPS						
Total NASM Inventory		4,285.00	0.015	64.28	0.00	0.0
STUDENT AND CENTRAL SERVICES						
Total FTE Students		789.80	2.0	1,579.60	258.00	16.3
TOTAL FORMULA AREAS				8,419.77	3,346.00	39.7

Table A3

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

HEARST

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	90.60	1.2	108.72	158.87	146.1
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	0.00	0.6	0.00	0.00	
Lab Contact Hours Y	0.00	0.5	0.00	0.00	
Lab Contact Hours Z	9.00	0.3	2.70	0.00	
Total Class Lab			2.70	86.66	3209.6
RESEARCH					
Research Disciplines A	0.00	45.0	0.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	1.00	20.0	20.00	20.00	
Research Disciplines D	1.00	10.0	10.00	10.00	
Research Disciplines E	5.00	1.0	5.00	5.00	
Total Research			35.00	21.71	62.0
OFFICE - ACADEMIC					
Total FTE Faculty	13.00	13.0	169.00		
Faculty Supplement	1.95	13.0	25.35		
Total FTE Grads	0.00	4.0	0.00		
Office Service	194.35	0.3	58.31		
Total Academic Office				160.85	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	10.00	13.0	130.00		
Office Service	130.00	0.3	39.00		
Total Admin. Office				199.43	
Total Office			421.66	360.28	85.4
LIBRARY					
10% of Total Eq. Volumes	2,826.20	0.004	11.30		
Next 300,000	25,435.80	0.007	178.05		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	28,262.00		189.36	217.48	114.9
FTE UG - Excl. Prof.	90.60	0.5	45.30		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	90.60		45.30	43.20	95.4
Stack & Study	234.66	0.25	58.66	49.32	84.1
Total Library			293.32	310.00	105.7
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	90.60				
4,000-8,000 Enrol.	0.00				
Total FTE Students	90.60	0.9	81.54		
Total P.E./Athletics			2,081.54	604.25	29.0
MAINTENANCE SHOPS					
Total NASM Inventory	5,304.69	0.015	79.57	224.27	281.9
STUDENT AND CENTRAL SERVICES					
Total FTE Students	90.60	2.0	181.20	527.76	291.3
TOTAL FORMULA AREAS			3,203.70	2,293.80	71.6

Table A4

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 1986-87

ONTARIO COLLEGE OF ART

	INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	% I/G
CLASSROOMS					
Total FTE Students	1,783.03	1.2	2,139.64	727.02	34.0
CLASS LABS					
Lab Contact Hours W	0.00	0.8	0.00	0.00	
Lab Contact Hours X	0.00	0.6	0.00	0.00	
Lab Contact Hours Y	0.00	0.5	0.00	430.00	
Lab Contact Hours Z	0.00	0.3	0.00	0.00	
Total Class Lab			0.00	7,356.05	
RESEARCH					
Research Disciplines A	0.00	45.0	0.00	0.00	
Research Disciplines B	0.00	30.0	0.00	0.00	
Research Disciplines C	0.00	20.0	0.00	0.00	
Research Disciplines D	0.00	10.0	0.00	0.00	
Research Disciplines E	0.00	1.0	0.00	0.00	
Total Research			0.00	0.00	
OFFICE - ACADEMIC					
Total FTE Faculty	87.00	13.0	1,131.00		
Faculty Supplement	13.05	13.0	169.65		
Total FTE Grads	0.00	4.0	0.00		
Office Service	1,300.65	0.3	390.20		
Total Academic Office				877.33	
OFFICE - ADMINISTRATIVE					
Total FTE Non-Acd Staff	105.26	13.0	1,368.38		
Office Service	1,368.38	0.3	410.51		
Total Admin. Office				636.57	
Total Office			3,469.74	1,533.90	44.2
LIBRARY					
10% of Total Eq. Volumes	3,625.50	0.004	14.50		
Next 300,000	32,629.50	0.007	228.41		
Next 300,000	0.00	0.006	0.00		
Remainder	0.00	0.005	0.00		
Total Stack	36,255.00		242.91	488.28	201.0
FTE UG - Excl. Prof.	1,783.03	0.5	891.52		
FTE UG - Professional	0.00	1.0	0.00		
FTE Grads	0.00	0.7	0.00		
Total Study	1,783.03		891.52	20.07	2.3
Stack & Study	1,134.43	0.25	283.61	0.00	0.0
Total Library			1,418.03	508.35	35.8
PHYSICAL EDUCATION/ATHLETICS					
Under 4,000 FTE Enrol.	1,783.03				
4,000-8,000 Enrol.	0.00				
Total FTE Students	1,783.03	0.9	1,604.73		
Total P.E./Athletics			3,604.73	0.00	0.0
MAINTENANCE SHOPS					
Total NASM Inventory	11,874.29	0.015	178.11	122.52	68.8
STUDENT AND CENTRAL SERVICES					
Total FTE Students	1,783.03	2.0	3,566.07	1,626.45	45.6
TOTAL FORMULA AREAS			14,376.32	11,674.29	82.6

Table A5

INSTITUTIONAL SPACE REQUIREMENTS AS MEASURED BY COU SPACE STANDARDS, 198

TORONTO (ST. GEORGE)

		INPUT MEASURE	SPACE FACTOR	GENERATED SPACE	INVENTORY	I/G
CLASSROOMS						
Total FTE Students		28,522.19	1.2	34,226.63	37,421.20	109.3
CLASS LABS						
Lab Contact Hours	W	8,275.00	0.8	6,620.00	6,659.40	
Lab Contact Hours	X	57,218.00	0.6	34,330.80	38,434.10	
Lab Contact Hours	Y	1,090.00	0.5	545.00	2,364.80	
Lab Contact Hours	Z	6,099.00	0.3	1,829.70	1,810.70	
Total Class Lab				43,325.50	49,269.00	113.7
RESEARCH						
Research Disciplines	A	1,065.97	45.0	47,968.65	44,707.60	
Research Disciplines	B	648.32	30.0	19,389.45	19,496.70	
Research Disciplines	C	86.13	20.0	1,722.60	1,726.50	
Research Disciplines	D	337.61	10.0	3,376.10	2,671.10	
Research Disciplines	E	2,403.20	1.0	2,403.20	656.10	
Total Research				74,860.00	69,258.00	92.5
OFFICE - ACADEMIC						
Total FTE Faculty		2,060.48	13.0	26,786.24		
Faculty Supplement		309.07	13.0	4,017.94		
Total FTE Grads		4,843.06	4.0	19,372.24		
Office Service		50,176.42	0.3	15,052.92		
Total Academic Office					74,357.64	
OFFICE - ADMINISTRATIVE						
Total FTE Non-Acd Staff		2,422.84	13.0	31,496.92		
Office Service		31,496.92	0.3	9,449.08		
Total Admin. Office					28,753.96	
Total Office				106,175.34	103,111.60	97.1
LIBRARY						
10% of Total Eq. Volumes		740,711.80	0.004	2,962.85		
Next 300,000		300,000.00	0.007	2,100.00		
Next 300,000		300,000.00	0.006	1,800.00		
Remainder		6,066,406.20	0.005	30,332.03		
Total Stack		7,407,118.00		37,194.88	32,727.70	88.0
FTE UG - Excl. Prof.		20,984.63	0.5	10,492.32		
FTE UG - Professional		2,694.50	1.0	2,694.50		
FTE Grads		4,843.06	0.7	3,390.14		
Total Study		28,522.19		16,576.96	19,183.90	115.7
Stack & Study		53,771.84	0.25	13,442.96	17,901.00	133.2
Total Library				67,214.79	69,812.60	103.9
PHYSICAL EDUCATION/ATHLETICS						
Under 4,000 FTE Enrol.		0.00				
4,000-8,000 Enrol.		0.00				
Total FTE Students		28,522.19	0.9	25,669.97		
Total P.E./Athletics				25,669.97	27,181.40	105.9
MAINTENANCE SHOPS						
Total NASM Inventory		516,066.87	0.015	7,741.00	5,711.00	73.8
STUDENT AND CENTRAL SERVICES						
Total FTE Students		28,522.19	2.0	57,044.38	42,628.90	74.7
TOTAL FORMULA AREAS				416,237.61	404,393.70	97.1